

**TITLE:** Interim DoD Instruction 5000.02, “Operation of the Defense Acquisition System,” November 25, 2013

**SUMMARY:** In accordance with Deputy Secretary of Defense Memorandum, “Defense Acquisition,” November 26, 2013, this instruction reissues and cancels DoDI 5000.02, “Operation of the Defense Acquisition System,” December 8, 2008, with the exception of Enclosure 9.

This document contains:

- Deputy Secretary of Defense Memorandum, “Defense Acquisition,” November 26, 2013
- Interim DoD Instruction 5000.02, “Operation of the Defense Acquisition System,” November 25, 2013
- Cancelled (with the exception of Enclosure 9) DoDI 5000.02, “Operation of the Defense Acquisition System,” December 8, 2008



DEPUTY SECRETARY OF DEFENSE  
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WASHINGTON, DC 20301-1010

NOV 26 2013

MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS  
CHAIRMAN OF THE JOINT CHIEFS OF STAFF  
UNDER SECRETARIES OF DEFENSE  
DEPUTY CHIEF MANAGEMENT OFFICER  
DIRECTOR, COST ASSESSMENT AND PROGRAM EVALUATION  
DIRECTOR, OPERATIONAL TEST AND EVALUATION  
GENERAL COUNSEL OF THE DEPARTMENT OF DEFENSE  
INSPECTOR GENERAL OF THE DEPARTMENT OF DEFENSE  
ASSISTANT SECRETARIES OF DEFENSE  
DEPARTMENT OF DEFENSE CHIEF INFORMATION OFFICER  
ASSISTANTS TO THE SECRETARY OF DEFENSE  
DIRECTOR, ADMINISTRATION AND MANAGEMENT  
DIRECTOR, NET ASSESSMENT  
DIRECTORS OF THE DEFENSE AGENCIES  
DIRECTORS OF THE DOD FIELD ACTIVITIES

SUBJECT: Defense Acquisition

I have determined that the current DoD Instruction (DoDI) 5000.02, "Operation of the Defense Acquisition System," December 8, 2008, requires revision to create an acquisition policy environment that will achieve greater efficiency and productivity in defense spending and effectively implement the department's Better Buying Power (BBP) initiatives. Therefore, I am canceling this issuance with the exception of Enclosure 9, Acquisition of Services, and replacing it with the attached interim policy effective immediately.

I am directing the Under Secretary of Defense for Acquisition, Technology, and Logistics (USD(AT&L)), with the Department of Defense Chief Information Officer and the Director, Operational Test and Evaluation, to jointly prepare a revised DoDI 5000.02 within 180 days. The USD(AT&L) will draft a new instruction to address acquisition of services in the same time period.

Attachment:  
As stated



OSD013748-13



# Department of Defense **INSTRUCTION** **- INTERIM -**

**NUMBER 5000.02**  
*November 25, 2013*

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USD(AT&L)

**SUBJECT:** Operation of the Defense Acquisition System

**References:** See References Enclosure

1. PURPOSE. This instruction:

a. In accordance with the authority in DoD Directive 5000.01 (Reference (a)), reissues DoD Instruction 5000.02 (Reference (b)) to update established policy for the management of all acquisition programs in accordance with Reference (a), the guidelines of Office of Management and Budget Circular A-11 (Reference (c)), and References (j) through (ci).

b. Authorizes Milestone Decision Authorities (MDAs) to tailor the regulatory requirements and acquisition procedures in this instruction to more efficiently achieve program objectives, consistent with statutory requirements and Reference (a).

c. Incorporates and cancels the following directive type memorandums (DTMs):

(1) DTM 09-025 (Reference (d)).

(2) DTM 09-027 (Reference (e)).

(3) DTM 10-015 (Reference (f)).

(4) DTM 10-017 (Reference (g)).

(5) DTM 11-003 (Reference (h)).

(6) DTM 11-009 (Reference (i)).

2. APPLICABILITY. This instruction applies to OSD, the Military Departments, the Office of the Chairman of the Joint Chiefs of Staff and the Joint Staff, the Combatant Commands, the Office of the Inspector General of the Department of Defense, the Defense Agencies, the DoD

Attachment

Field Activities, and all other organizational entities within the DoD (referred to collectively in this instruction as the “DoD Components”).

3. POLICY. The overarching management principles and mandatory policies that govern the Defense Acquisition System are described in Reference (a). This instruction provides the detailed procedures that guide the operation of the system.

#### 4. RESPONSIBILITIES

a. Defense Acquisition Executive (DAE). The DAE is the Under Secretary of Defense for Acquisition, Technology, and Logistics (USD(AT&L)). The DAE will act as the MDA for Major Defense Acquisition Programs (MDAPs) and Major Automated Information System (MAIS) programs. In accordance with Table 1 in Enclosure 1 of this instruction, the DAE may delegate authority to act as the MDA to the head of a DoD Component, who may further delegate the authority to the Component Acquisition Executive (CAE). The DAE may also delegate MDA authority to another OSD official as the DAE considers appropriate.

b. MDA. The MDA will establish procedures for assigned programs using this instruction as guidance. MDAs should limit mandatory procedures applicable to all assigned programs so as to not exceed the requirements for MDAPs or MAIS programs and other acquisition programs governed by this instruction or DoD Directive 5000.01 (Reference (a)). MDAs should tailor regulatory procedures in the document consistent with sound business practice and the risks associated with the product being acquired.

c. Heads of the DoD Components. The DoD Component Head will implement the procedures in this instruction and Reference (a). Component-required procedures will not exceed those specified in this instruction. When necessary, waivers or requests for exceptions to the provisions of this instruction will be submitted to the DAE, the DoD Chief Information Officer (CIO), the Director, Operational Test and Evaluation (DOT&E), or the Director, Cost Assessment and Program Evaluation (DCAPE), as appropriate, via the CAE. Statutory requirements cannot be waived unless the statute permits.

#### 5. PROCEDURES

##### a. Overview

(1) The statutes governing defense acquisition programs are complex, and the categories into which a program falls will impact acquisition procedures. The designation of a program as an MDAP, a MAIS program, or a Major Weapons System; and the determination that the program is an Information System, a Defense Business System (DBS), or responds to an urgent need affect program procedures and policies.

(2) The structure of a DoD acquisition program and the procedures used should be tailored as much as possible to the characteristics of the product being acquired, and to the totality of circumstances associated with the program including operational urgency and risk factors.

(a) MDAs will tailor program strategies and oversight, including program information, acquisition phase content, the timing and scope of decision reviews and decision levels, based on the specifics of the product being acquired, including complexity, risk factors, and required timelines to satisfy validated capability requirements.

(b) When there is a strong threat-based or operationally driven need to field a capability solution in the shortest time, MDAs are authorized to implement streamlined procedures designed to accelerate acquisition system responsiveness. Statutory requirements will be complied with, unless waived in accordance with relevant provisions.

(3) Program Acquisition Categories (ACATs) and Types: All defense acquisition programs are designated by an ACAT (i.e., ACAT I through III) and type (e.g., MDAP, MAIS, or Major System). MDAPs are either estimated to achieve the statutorily defined MDAP cost threshold, or are designated as an MDAP by the DAE. Similarly, MAIS programs are either estimated to achieve the statutorily defined MAIS program cost threshold, or are designated a MAIS program by the DAE. MAIS programs are software intensive and typically have a lower investment level than MDAPs. A MAIS program that is estimated to attain the MDAP cost thresholds may be designated by the DAE as either an MDAP or a MAIS program. MDAP and MAIS program designations carry the greatest consequences in terms of management level, reporting requirements, and documentation and analysis to support program decisions. Table 1 in Enclosure 1 of this instruction provides specific definitions, funding thresholds, and decision authorities. Some information systems are also designated as a National Security System or a DBS. These designations are defined in statute and have procedural and policy consequences. Enclosures 11 and 12 describe the differences. Enclosure 1 identifies the information requirements associated with all standard program categories or types in tabular form.

(4) Program Decision Reviews and Milestones. The purpose of the decision reviews embedded in the acquisition procedures described in this section is to carefully assess a program's readiness to proceed to the next acquisition phase and to make a sound investment decision committing the Department's financial resources. Consequently, reviews will be issue and data focused to facilitate an examination of relevant questions affecting the decisions under consideration and to allow the MDA to judge whether the program is ready to proceed. The following policies will guide decision reviews:

(a) The MDA is the sole and final decision authority. Staff members and staff organizations support and facilitate the MDA's execution of that authority.

(b) The Defense Acquisition Board will advise the DAE on critical acquisition decisions when the DAE is the MDA. The DAE or designee will chair the Defense Acquisition Board. An Acquisition Decision Memorandum (ADM) will document decisions resulting from reviews. Similar procedures will be established at the Component level for use by other MDAs.

(c) Program Managers, under the supervision of Program Executive Officer (PEOs) and CAEs, are expected to design acquisition programs, prepare programs for decisions, and execute approved program plans.

(d) Overarching Integrated Product Teams at the DoD level, and similar organizations within the DoD Components are expected to collectively assist the MDA in making sound investment decisions for the department, and to ensure programs are structured and resourced to succeed. These organizations are not decision bodies and they and their leaders do not supplant the authority of the Program Manager, PEO, CAE, or DAE.

(e) Issues should be resolved at the lowest level possible. When an issue cannot be resolved quickly at a lower level, the issue will be submitted to the MDA with objective and complete data necessary to support a decision.

(f) The documents prepared in support of the decision process (e.g., Acquisition Strategy, Systems Engineering Plan (SEP), Test and Evaluation Master Plan (TEMP), Life-Cycle Sustainment Plan (LCSP), etc.) should generally not be prepared solely for staff review and approval, but be intended primarily for use within the program as planning and management tools that are highly specific to the program and tailored to meet program needs.

(g) Review preparation will be streamlined and efficient. Staff members will be provided with the data needed to support the review, but they will also work to minimize the overhead burden placed on Components, PEOs, program managers, and their staffs.

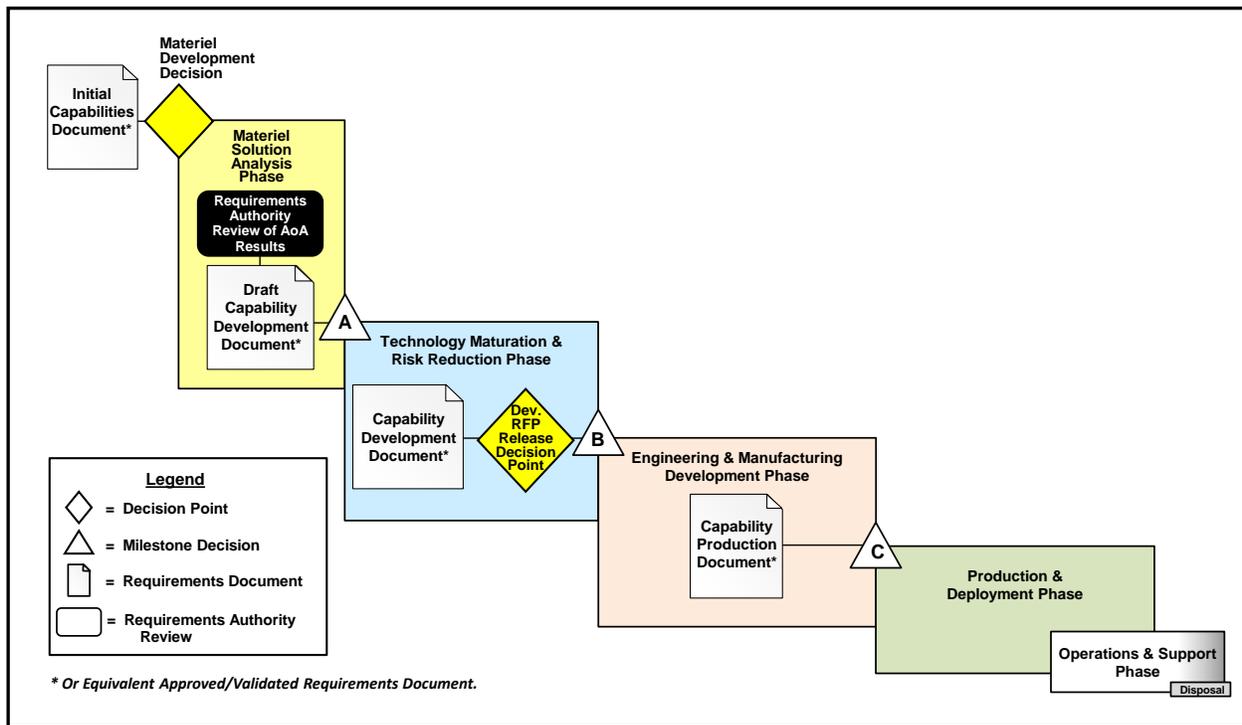
b. Relationship Between Defense Acquisition, Requirements, and Budgeting Processes

(1) Acquisition, requirements, and budgeting, are closely related and must operate simultaneously with full cooperation and in close coordination. Validated “Capability Requirements” provide the basis for defining the products that will be acquired through the acquisition system and the budgeting process determines Department priorities and resource allocations and provides the funds necessary to execute planned programs. Throughout a product’s life cycle, adjustments may have to be made to keep the three processes aligned. Capability Requirements may have to be adjusted to conform to technical and fiscal reality. Acquisition programs may have to adjust to changing requirements and funding availability. Budgeted funds may have to be adjusted to make programs executable or to adapt to evolving validated Capability Requirements and priorities. Stable Capability Requirements and funding are important to successful program execution. Those responsible for the three processes at the DoD level and within the DoD Components must work closely together to adapt to changing circumstances as needed, and to identify and resolve issues as early as possible.

(2) Capability Requirements Process

(a) All acquisition programs respond to validated Capability Requirements. Figure 1 illustrates the interaction between the requirements process and the acquisition process. The Chairman of the Joint Chiefs of Staff, with the advice of the Joint Requirements Oversight Council (JROC), will assess and validate joint military requirements for MDAP and MAIS programs, and less-than-MDAP or MAIS programs designated either as “JROC Interest” or “Joint Capabilities Board Interest.” When JROC validation authority is delegated in accordance with the Joint Capabilities Integration and Development System (JCIDS) process in Chairman of the Joint Chiefs of Staff Instruction 3170.01H (Reference (j)), DoD Components and others will use variations of the JCIDS to validate their requirements. The chair of the Investment Review Board is the validation authority for DBS Capability Requirements.

Figure 1. Illustration of the Interaction between the Capability Requirements Process and the Acquisition Process



(b) Leadership of the acquisition and budget processes will be involved as advisors to the validation authority during consideration of initial or adjusted validation of capability requirements to ensure coordination across the three processes.

(c) The titles of Capability Requirements documents supported by JCIDS vary by the maturity of the capability gap to solution proposal and can vary by product classification. When the titles vary from the most typical Initial Capabilities Document (ICD), Capability Development Document (CDD), or Capability Production Document, the text will use the

generic terms, “validated capability requirements document” or “equivalent requirements document.”

(d) Capability Requirements are not expected to be static during the product life cycle. As knowledge and circumstances change, consideration of adjustments or changes may be requested by acquisition, budgeting, or requirements officials. Configuration steering boards, as described in paragraph 5.d.(5)(b), will also be used to periodically review program progress and identify opportunities for adjustment.

(3) Budgeting Process. The DoD budgeting process is based on the annual budget preparation cycle managed by the DCAPE and the Under Secretary of Defense (Comptroller) for the Deputy Secretary of Defense. This process produces a Future Years Defense Program (FYDP) that covers 5 years of spending. While individual program decisions fall under the DAE or designated MDA, DoD budget decisions are made separately at the Secretary or Deputy Secretary level, with the advice of the DAE and others. Within the DoD Components, MDAs will advise the Component budget authorities to ensure that acquisition programs are adequately funded and that program plans are consistent with programmed funding levels.

c. Generic and DoD-Specific Acquisition Program Models, Decision Points, and Phase Activities

(1) This section is structured in increasing layers of detail and complexity, beginning with a very generic description of acquisition phases and decision points that could apply to almost any product life cycle, DoD or otherwise, followed by more specific commonly used DoD program models, and concluding with a description of the procedures used in most DoD acquisition programs prior to any tailoring. DoD acquisition managers and staff should focus on the basics of sound acquisition planning, management and decision making as discussed in this section as their primary responsibility—while also assuring compliance as appropriate with the specific requirements found in the tables that follow in Enclosure 1 and other applicable enclosures.

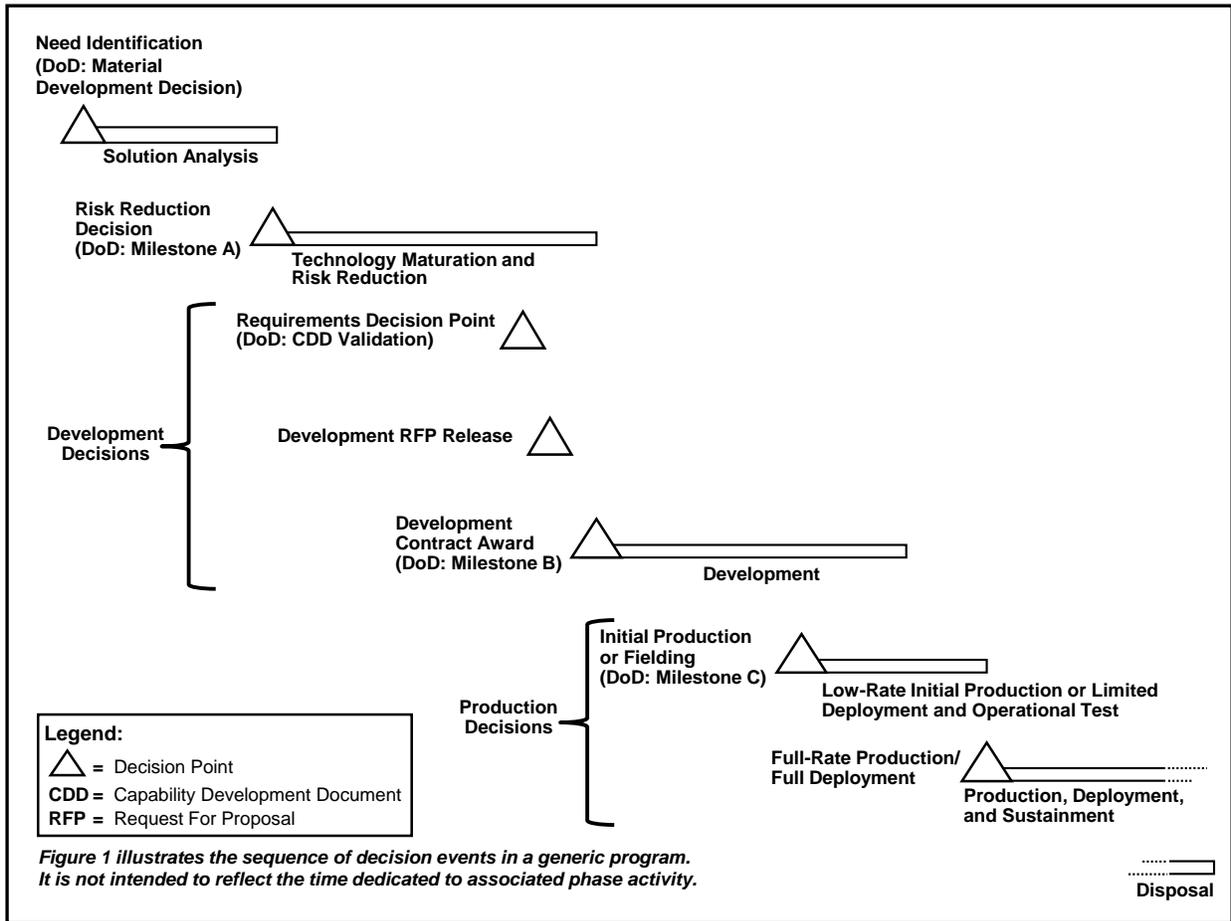
(2) Generic Acquisition Program Structure and Decision Points

(a) Generic Acquisition Program Structure. For reference, a generic product acquisition program would follow the structure depicted in Figure 2. Figure 2 illustrates the sequence of decision events in a generic program, which could be a Defense program or, except for the unique DoD terminology, a commercial product.

(b) Generic Acquisition Milestones and Decision Points

1. Need Identification, called the Materiel Development Decision by DoD, is the decision that a new product is needed and that activities to analyze alternative solutions will occur.

Figure 2. Generic Acquisition Phases and Decision Points



2. Risk Reduction Decision, called Milestone A by DoD, is an investment decision to pursue specific product or design concepts, and to commit the resources required to mature technology and/or reduce any risks that must be mitigated prior to decisions committing the resources needed for development leading to production and fielding.

3. The decision to commit resources to the development of a product for manufacturing and fielding, called Engineering and Manufacturing Development (EMD) by DoD, follows completion of any needed technology maturation and risk reduction. DoD breaks this commitment into three related decisions: (1) a requirements decision point (called the CDD Validation Decision by DoD); (2) a decision to release a solicitation for development to industry, called the Development Request for Proposals (RFP) Release Decision Point; and (3) a decision to award the contract(s) for development, called Milestone B by DoD. Formally, the development contract award authorized at DoD’s Milestone B is the critical decision point in an acquisition program because it commits the organization’s resources to a specific product, budget profile, choice of suppliers, contract terms, schedule, and sequence of events leading to production and fielding. In practice however, almost all of these decisions have to be made prior to the release of the RFP to industry in order to inform the bidders’ proposals. For DoD, the RFP

release decision point is the point at which plans for the program must be most carefully reviewed to ensure all risks are understood and under control, the program plan is sound, and that the program will be affordable and executable.

a. Requirements Decision Point (CDD Validation Decision for DoD). The point at which the major cost and performance trades have been completed and enough risk reduction has been completed to support a decision to commit to the set of requirements that will be used for preliminary design activities, development, and production (subject to reconsideration and refinement as knowledge increases).

b. Development RFP Release Decision. The point at which planning for development is complete and a decision can be made to release an RFP for development (and possibly initial production) to industry.

c. Development Decision, called Milestone B by DoD. The development decision commits the resources (authorizes proceeding to award of the contract(s)) needed to conduct development leading to production and fielding of the product.

4. The decision to enter production follows development and testing. For DoD, the production decision is normally broken into two DoD decisions: (1) Initial Production or Initial Fielding, called Milestone C by DoD; and (2) the Full Rate Production or Full Fielding Decision.

a. The Initial Production Decision. The production decision, usually based on developmental testing results, commits the resources (i.e., authorizes proceeding to award the contract(s)) required to enter production and begin fielding of the product. Evidence from testing that the product design is stable is the critical consideration for this decision. The commitment to enter production is very difficult and expensive to reverse.

b. Full Rate Production/Full Deployment Decision. The decision, following completion of operational testing of representative initial production products, to scale up production and/or fielding.

5. While these generic decision points and milestones are standard, MDAs have full latitude to tailor programs in the most effective and efficient structure possible, to include eliminating phases and combining or eliminating milestones and decision points, unless constrained by statute. Paragraph 5.d provides more detail about the standard structure, milestones, and decision points as they apply to most defense acquisition programs. Enclosure 1 includes tables of specific requirements for the various statutory categories of programs. Enclosures 11 through 13 provide additional information about each of the following statutory or regulatory product categories: Information Technology (IT) (described in Enclosure 11), DBS (described in Enclosure 12), and Urgent Needs (described in Enclosure 13).

### (3) Defense Acquisition Program Models

(a) The following paragraphs describe four basic models that serve as examples of defense program structures tailored to the type of product being acquired or to the need for accelerated acquisition. Two additional hybrid models combine the features of multiple basic models. Each basic model is tailored to the dominant characteristics of the product being acquired (e.g., hardware intensive products such as most weapons systems). The hybrids are described because many products will require combining models, such as a weapons systems development that includes significant software development. Acquisition programs should use these models as a starting point in structuring a program to acquire a specific product.

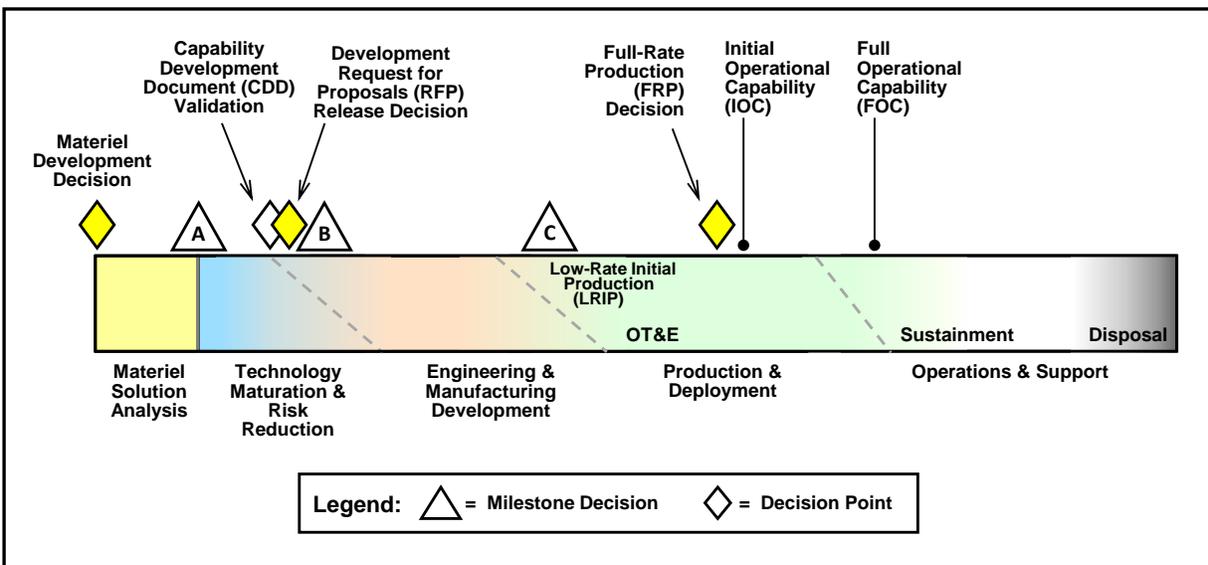
1. The models provide baseline approaches. A specific program should be tailored to the unique character of the product being acquired.

2. All of the models contain requirements and product definition analysis, risk reduction, development, testing, production, deployment, and sustainment phases punctuated by major investment decisions at logical programmatic and contractual decision points. Progress through the acquisition management system as depicted in any of these models or in a tailored variation depends on obtaining sufficient knowledge about the capability to be provided and risks and costs remaining in the program to support a sound business decision to proceed to the next phase.

3. Figures and brief descriptions are provided for each model. The figures illustrate the typical sequence of events and activities. A dotted diagonal line and color blending imply overlapping activities.

(b) Model 1: Hardware Intensive Program. Figure 3 is a model of a hardware intensive development program such as a major weapons platform. This is the classic model that has existed in some form in all previous editions of this instruction. It is the starting point for most military weapon systems; however, these products almost always contain software development resulting in some form of Hybrid Model A (paragraph 5.c.(3)(f)1 describes Hybrid Model A).

Figure 3. Model 1: Hardware Intensive Program

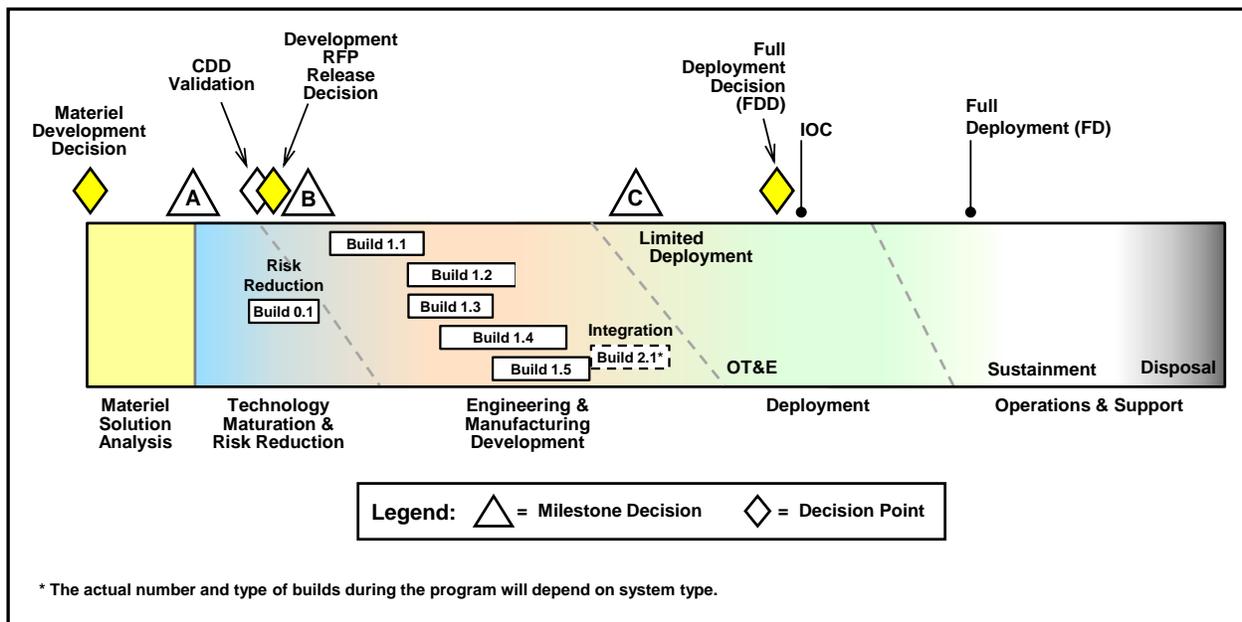


(c) Model 2: Defense Unique Software Intensive Program. Figure 4 is a model of a program that is dominated by the need to develop a complex, usually defense unique, software program that will not be deployed until several software builds have been completed. The central feature of this model is the planned software builds – a series of testable, integrated subsets of the overall capability – which together with clearly defined decision criteria, ensure adequate progress is being made before fully committing to subsequent builds.

1. Examples of this type of product include military unique command and control systems and significant upgrades to the combat systems found on major weapons systems such as surface combatants and tactical aircraft.

2. Several software builds are typically necessary to achieve a deployable capability. Each build has allocated requirements, resources, and scheduled testing to align dependencies with subsequent builds and to produce testable functionality to ensure that progress is being achieved. The build sequencing should be logically structured to flow the workforce from effort to effort smoothly and efficiently, while reducing overall cost and schedule risk for the program.

Figure 4. Model 2: Defense Unique Software Intensive Program

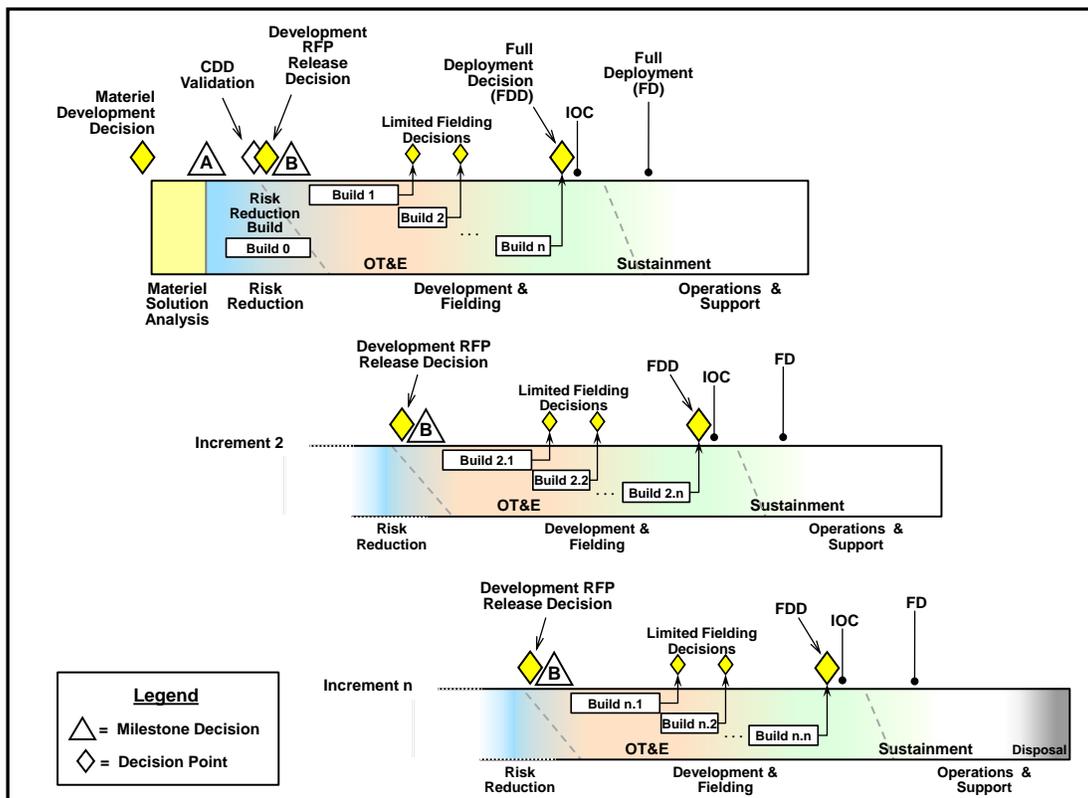


(d) Model 3: Incrementally Fielded Software Intensive Program. Figure 5 is a model that has been adopted for many DBS. It also applies to upgrades to some command and control systems or weapons systems software where fielding will occur in multiple increments as new capability is developed and delivered, nominally in 1- to 2-year cycles.

1. This model is distinguished from the previous model by the rapid delivery of capability through several limited fieldings in lieu of single Milestones B and C and a single full deployment. Each limited fielding results from a specific build, and provides the user with mature and tested sub-elements of the overall capability. Several builds and fieldings will typically be necessary to satisfy approved requirements for an increment of capability. The identification and development of technical solutions necessary for follow-on capabilities have some degree of concurrency, allowing subsequent increments to be initiated and executed more rapidly.

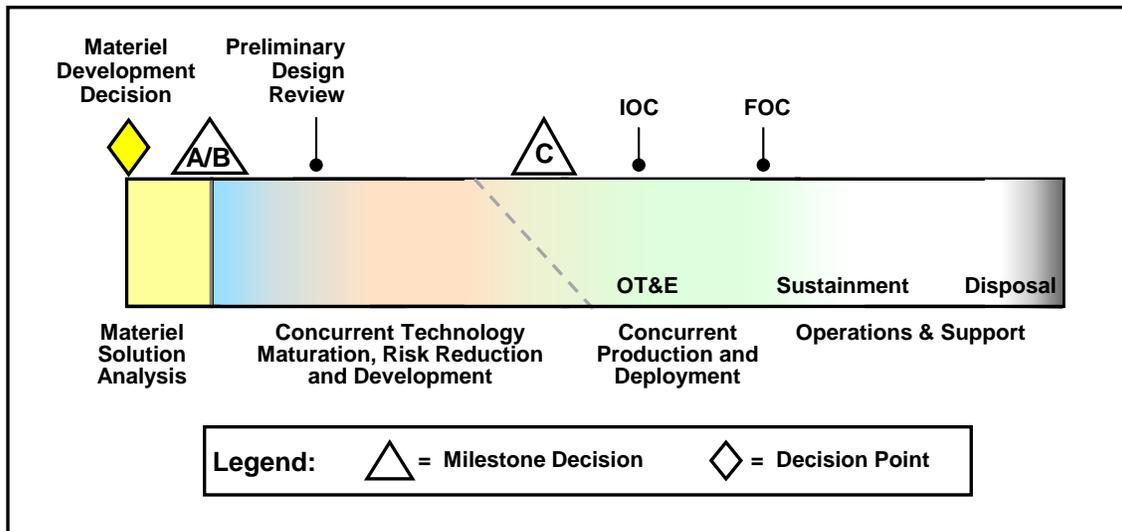
2. This model will apply in cases where commercial off-the-shelf software, such as commercial business systems with multiple modular capabilities, are acquired and adapted for DoD applications. An important caution in using this model is that it can be structured so that the program is overwhelmed with frequent milestone or fielding decision points and associated approval reviews. To avoid this, multiple activities or build phases may be approved at any given milestone or decision point, subject to adequate planning, well-defined exit criteria, and demonstrated progress. An early decision to select the content for each follow-on increment (2 through N) will permit initiation of activity associated with those increments. Several increments will typically be necessary to achieve the required capability.

Figure 5. Model 3: Incrementally Fielded Software Intensive Program



(e) Model 4: Accelerated Acquisition Program. Figure 6 is a model that applies when schedule considerations dominate over cost and technical risk considerations. This model compresses or eliminates phases of the process and accepts the potential for inefficiencies in order to achieve a deployed capability on a compressed schedule. The model shows one example of tailoring for accelerated acquisition and many others are possible. This type of structure is used when technological surprise by a potential adversary necessitates a higher-risk acquisition program. Procedures applicable to urgent needs that can be fulfilled in less than 2 years are a subset of this model and are discussed in Enclosure 13.

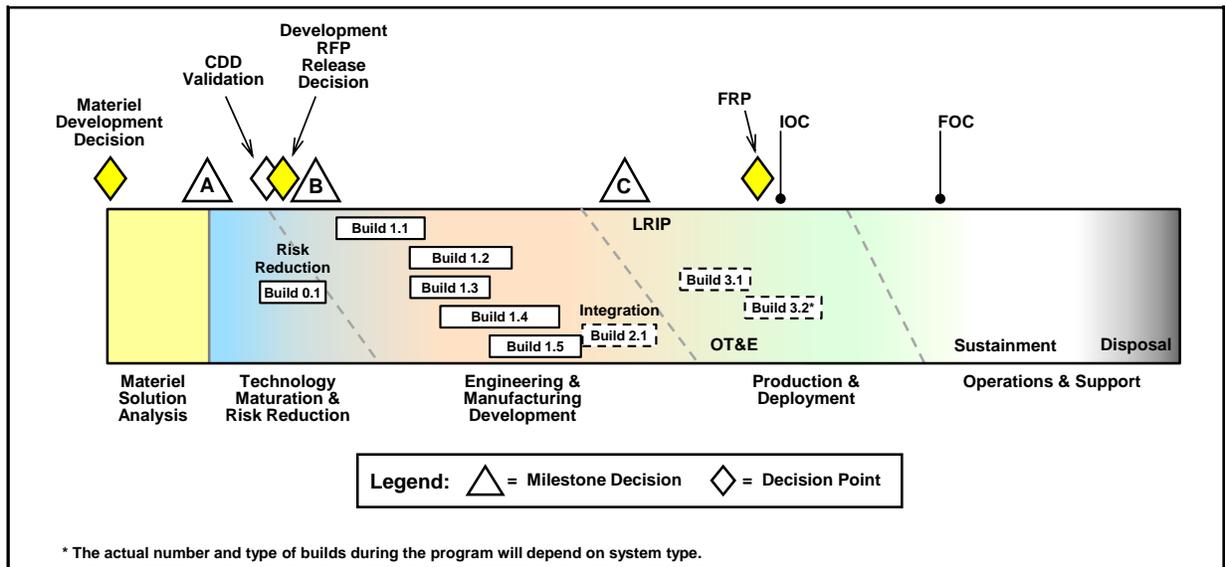
Figure 6. Model 4: Accelerated Acquisition Program



(f) Hybrid Acquisition Programs

1. Figure 7 is a model depicting how a major weapons system combines hardware development as the basic structure with a software intensive development that is occurring simultaneously with the hardware development program. In a hardware intensive development, the design, fabrication, and testing of physical prototypes may determine overall schedule, decision points, and milestones, but software development will often dictate the pace of program execution and must be tightly integrated and coordinated with hardware development decision points.

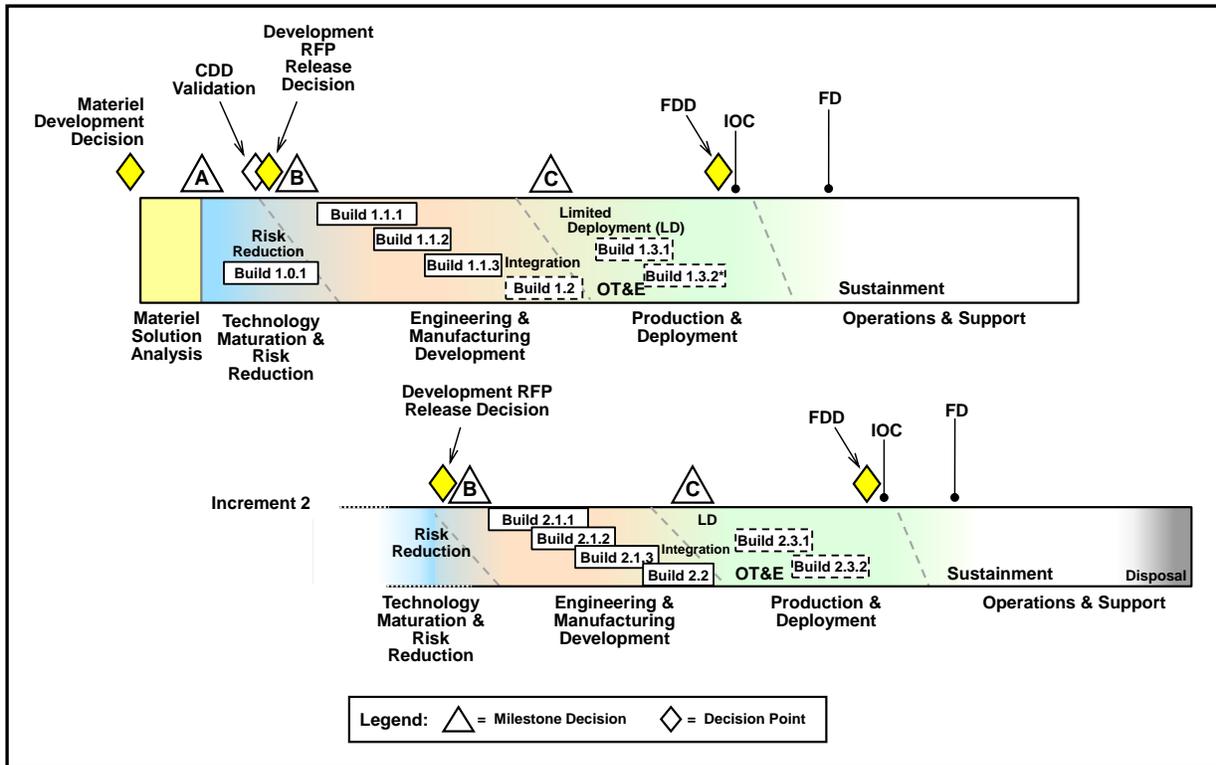
Figure 7. Hybrid Program A (Hardware Dominant)



2. In the hybrid “A” model, software development should be organized into a series of testable software builds, as depicted in Figure 7. These builds should lead up to the full capability needed to satisfy program requirements and Initial Operational Capability (IOC). Software builds should be structured so that the timing of content delivery is synchronized with the need for integration, developmental and operational testing in hardware prototypes. The Milestone B decision to enter EMD and the Milestone C decision to enter Production and Deployment should include software functional capability development maturity criteria as well as demonstrated technical performance exit criteria.

3. Figure 8, Hybrid Model B, depicts how a software intensive product development can include a mix of incrementally fielded software products or releases that include intermediate software builds. All of the comments about incremental software fielding associated with Model 3 in paragraph 5.c.(3)(d) apply here as well. This is a complex model to plan and execute successfully, but depending on the product it may be the most logical way to structure the acquisition program.

Figure 8. Hybrid Program B (Software Dominant)



(g) Risk Management in Hybrid Models. Highly integrated complex software and hardware development poses special risks to program cost and schedule performance. Technical, cost, and schedule risks associated with hardware and software development must be managed throughout the program’s life cycle and will be a topic of special interest at all decision points and milestones.

d. Acquisition Process Decision Points and Phase Content. The following procedures are general and are applicable to the acquisition program models previously described and to variations in them. Tailoring is always appropriate when it will produce a more efficient and effective acquisition approach for the specific product. Non-MDAP and non-MAIS programs will use analogous DoD Component processes. Additional or modified procedures applicable to IT programs and to DBS are described in Enclosures 11 and 12 of this instruction. Procedures applicable to urgent needs are described in Enclosure 13.

(1) Materiel Development Decision

(a) The Materiel Development Decision is based on a validated initial requirements document (an ICD or equivalent requirements document) and the completion of the Analysis of Alternatives (AoA) Study Guidance and the AoA Study Plan. This decision directs execution of the AoA, and authorizes the DoD Component to conduct the Materiel Solution Analysis Phase. This decision point is the entry point into the acquisition process for all defense acquisition products; however, an “acquisition program” is not formally initiated (with the accompanying statutory requirements) until Milestone B, or at Milestone C for those programs that enter directly at Milestone C. DoD Components may have conducted enough analysis to support preliminary conclusions about the desired product at this point. If so, that analysis may be used by the DAE to narrow the range of alternatives. If not, requirements are likely to be less well-defined or firm, and a wider range of alternatives will need to be considered.

(b) At the Materiel Development Decision, the DCAPE, (or DoD Component equivalent) will present the AoA Study Guidance, and the AoA lead organization will present the AoA Study Plan. In addition, the Component will provide the plan to staff and fund the actions that will precede the next decision point (usually Milestone A) including, where appropriate, competitive concept definition studies by industry.

(c) If the Materiel Development Decision is approved, the MDA will designate the lead DoD Component; determine the acquisition phase of entry; and identify the initial review milestone, usually, but not always, a specific milestone as described in one of the program models. MDA decisions will be documented in an ADM. The approved AoA Study Guidance and AoA Study Plan will be attached to the ADM.

(2) Materiel Solution Analysis Phase

(a) Purpose. The purpose of this phase is to conduct the analysis and other activities needed to choose the concept for the product that will be acquired, to begin translating validated capability gaps into system-specific requirements including the Key Performance Parameters (KPPs) and Key System Attributes (KSAs), and to conduct planning to support a decision on the acquisition strategy for the product. AoA solutions, key trades between cost and performance, affordability analysis, risk analysis, and planning for risk mitigation are key activities in this phase.

(b) Phase Description

1. Minimum funding required for this phase is normally that needed to analyze and select an alternative for materiel development, and to complete the activities necessary to support a decision to proceed to the next phase; technology development and concept analysis and design efforts may also be funded in this phase.

2. The validated ICD and the AoA Study Plan will guide the AoA and Materiel Solution Analysis Phase activity. The analysis will be conducted in accordance with the procedures in Enclosure 9 of this instruction, and focus on identification and analysis of alternatives; measures of effectiveness; key trades between cost and capability; total life cycle cost, including sustainment; schedule; concepts of operations; and overall risk. The AoA will inform and be informed by affordability analysis, cost analysis, sustainment considerations, early systems engineering analyses, threat projections, and market research.

3. Prior to the completion of this phase, the DoD Component combat developer will prepare an Operational Mode Summary/Mission Profile (OMS/MP) that will include the operational tasks, events, durations, frequency, operating conditions and environment in which the recommended materiel solution is to perform each mission and each phase of a mission. The OMS/MP will be provided to the Program Manager and will inform development of the plans for the next phase including: acquisition strategy, test planning, and capability requirements trades. It will be provided to industry as an attachment for the next acquisition phase RFP.

4. This phase ends when a DoD Component has completed the necessary analysis and the activities necessary to support a decision to proceed to the next decision point and desired phase in the acquisition process. The next phase can be Technology Maturation and Risk Reduction (TMRR), EMD, or Production and Deployment, depending on the actions needed to mature the product being acquired. Each of these phases has associated decision points to authorize entry: Milestone A, Development RFP Release and Milestone B, or Milestone C. Each decision point and phase has information requirements identified in Table 2 in Enclosure 1 of this instruction, and other criteria as defined in paragraphs 5.d.(3) through 5.d.(14) in this instruction.

(c) Program Office Establishment and Next Phase Preparation. During the Materiel Solution Analysis Phase, the CAE will select a Program Manager and establish a Program Office to complete the necessary actions associated with planning the acquisition program with emphasis on the next phase. Prior to preparation and release of a final RFP for the planned next phase, the Program Manager should complete and submit the Acquisition Strategy and obtain MDA approval. An approved Acquisition Strategy will inform development of the final RFPs for the next phase of the program.

(3) Milestone A

(a) The Milestone A decision approves program entry into the TMRR Phase and release of final RFPs for TMRR activities. The responsible DoD Component may decide to perform technology maturation and risk reduction work in-house and/or award contracts associated with the conduct of this phase. Competitive prototypes are part of this phase unless specifically waived by the MDA. Key considerations are:

1. The justification for the preferred materiel solution.
2. The affordability and feasibility of the planned materiel solution.
3. The scope of the Capability Requirements trade space and understanding of the priorities within that trade space.
4. The understanding of the technical, cost, and schedule risks of acquiring the materiel solution, and the adequacy of the plans and programmed funding to mitigate those risks prior to Milestone B.
5. The efficiency and effectiveness of the proposed acquisition strategy (including the contracting strategy and intellectual property (IP) management plans) in light of the program risks and risk mitigation strategies.
6. The projected threat and its impact on the material solution.

(b) At the Milestone A Review:

1. The Program Manager will present the approach for acquiring the preferred materiel solution including: the Acquisition Strategy, the business approach, an assessment of program risk and how specific technology development and other risk mitigation activities will reduce the risk to acceptable levels, and appropriate “should cost management” targets.

2. The DoD Component will:

a. Present an affordability analysis and proposed affordability goals based on the resources that are projected to be available to the DoD Component in the portfolio(s) or mission area(s) associated with the program under consideration. The analysis will be supported by a quantitative assessment of all of the programs in the prospective program’s portfolio or mission area that demonstrates the ability of the Component’s estimated budgets to fund the new program over its planned life cycle. Affordability analyses are not intended to produce rigid, long-range plans; their purpose is to inform current decisions about the reasonableness of embarking on long-term capital investments at specific capability levels. The affordability analysis will support the Component’s proposed affordability goals for unit production and sustainment costs for MDA approval and inclusion in the Milestone A ADM. Enclosure 8 details the policy for affordability analyses and constraints.

b. Submit a DoD Component cost estimate for the preferred solution(s) identified by the AoA. Enclosure 10 covers cost estimating in greater detail.

c. Demonstrate that the program will be fully funded within the FYDP at Milestone A.

3. If Milestone A is approved, the MDA will make a determination on the materiel solution, the plan for the TMRR Phase, release of the final RFP, and specific exit criteria required to complete TMRR and enter EMD. The MDA will document these decisions in an ADM.

(c) If substantive changes to the plan approved at Milestone A are required as a result of the source selection process, the DoD Component will notify the MDA who may, at his or her discretion, conduct an additional review prior to contract awards.

(4) TMRR Phase

(a) Purpose. The purpose of this phase is to reduce technology, engineering, integration, and life cycle cost risk to the point that a decision to contract for EMD can be made with confidence in successful program execution for development, production, and sustainment.

(b) Phase Description

1. This phase should include a mix of activities intended to reduce the specific risks associated with the product to be developed. This includes additional design trades and requirements trades necessary to ensure an affordable product and executable development and production programs. Capability Requirements are matured and validated, and affordability caps are finalized during this phase. The TMRR Phase requires continuous and close collaboration between the program office and the requirements communities and authorities. During this phase, any realized should cost management savings should normally be used to further reduce program risk and future program costs. Enclosure 2 describes baseline cost control and the use of should cost management.

2. This phase normally includes competitive sources conducting technology maturation and risk reduction activities and preliminary design activities up to and including a Preliminary Design Review (PDR) prior to source selection for the EMD Phase.

a. Risk reduction prototypes will be included if they will materially reduce engineering and manufacturing development risk at an acceptable cost. Risk reduction prototypes can be at the system level or can focus on, sub-systems, or components.

b. A competitive prototype, or if this is not feasible, a single prototype or prototyping of critical subsystems prior to Milestone B is statutorily required to be part of the Acquisition Strategy for MDAPs and is a regulatory requirement for all other programs. The MDA may waive the competitive prototyping requirement at or prior to Milestone A if:

I. The cost of producing competitive prototypes exceeds the expected life-cycle benefits (in constant dollars) of producing the prototypes, including the benefits of improved performance and increased technological and design maturity that may be achieved through competitive prototyping; or

II. The department would be unable to meet critical national security objectives without such a waiver.

3. There are a number of ways to structure this phase which should be tailored to reduce the specific risks associated with the product being acquired. Technology Readiness Levels, described in the “Technology Readiness Assessment (TRA) Guidance,” Reference (k), should be used to benchmark technology risk during this phase; however, these indices are rough benchmarks, and not conclusive about the degree of risk mitigation needed prior to development. Deeper analysis of the actual risks associated with the preferred design and any recommended risk mitigation must be conducted and provided to the MDA.

(c) The Acquisition Strategy will guide this phase. Multiple technology development demonstrations, defined in the acquisition strategy, may be necessary before the operational user and material developer can substantiate that a preferred solution is feasible, affordable, and supportable; satisfies validated capability requirements; and has acceptable technical risk. Critical program information will be identified during this phase and program protection measures to prevent disclosure of critical information will be implemented. Planning for EMD, production, developmental and operational test, and life-cycle sustainment of proposed products will occur during this phase. The government will also update the program IP Strategy (see paragraph 7.d of Enclosure 2) to ensure the ability to compete future sustainment efforts consistent with the Acquisition Strategy to include competition for spares and depot repair.

(d) During this phase, and timed to support CDD validation (or its equivalent), the Program Manager will conduct a systems engineering trade-off analysis showing how cost and capability vary as a function of the major design parameters. The analysis will support the assessment of refined KPPs/KSAs in the CDD. Capability requirements proposed in the CDD (or equivalent requirements document) should be consistent with program affordability goals.

(e) Subsequent to CDD validation, the Program Manager will conduct additional requirements analysis including: requirements decomposition and allocation, definition of internal and external interfaces, and design activities leading to a PDR. Unless waived by the MDA, the PDR will occur prior to Milestone B.

(f) Program Planning

1. During the TMRR Phase, the Program Manager will plan the balance of the program, prepare for subsequent decision points and phases, and submit an updated Acquisition Strategy for MDA approval. The updated Acquisition Strategy will describe the overall approach to acquiring the capability to include the program schedule, risks, funding, and the business strategy. The business strategy will describe the rationale for the contracting approach and how competition will be maintained throughout the program life cycle, and detail how contract incentives will be employed to support the Department’s goals.

2. The Acquisition Strategy is described in detail in the Defense Acquisition Guidebook (Reference (l)).

3. To avoid re-planning and program disruptions, an updated Acquisition Strategy should be submitted to the MDA in time for approval prior to the preparation of the final RFP(s) for the next phase.

(g) Life-Cycle Considerations During the TMRR Phase

1. Planning for the sustainment phase should begin in this phase, when requirements trades and early design decisions are still occurring. The Program Manager will finalize sustainment requirements and decompose them into more detailed requirements to support the PDR and for the following uses:

- a. Support system and product support package design trades.
- b. Support test and evaluation planning.
- c. Provide performance metrics definition for product support contracts and organic support requirements.
- d. Provide logistics requirements, workload estimates, and logistics risk assessment.

2. The Program Manager will integrate the product support design into the overall design process, and assess enablers that improve supportability, such as diagnostics and prognostics, for inclusion in the system performance specification. As the design matures, the Program Manager will ensure that life-cycle affordability is a factor in engineering and sustainment trades.

(5) CDD Validation and Configuration Steering Boards (CSBs)

(a) CDD Validation

1. During the TMRR Phase, the requirements validation authority will validate the CDD (or equivalent requirements document) for the program. This action will precede the Development RFP Release Decision Point and provides a basis for preliminary design activities and the PDR that will occur prior to Milestone B unless waived by the MDA. Active engagement between acquisition leadership, including the MDA, and the requirements leadership, including the validation authority (the JROC for MDAP and MAIS programs), during the development and review of proposed requirements trades is essential to ensuring that the validated requirements associated with the program continue to address the priorities of the DoD Component and the Joint force in a cost effective and affordable way. The MDA (and CAE when the MDA is the DAE) will participate in the validation authorities' review and staffing of the CDD (or equivalent requirements document) prior to validation, to ensure that requirements are technically achievable, affordable, and testable, and that requirements trades are fully informed by systems engineering trade-off analyses completed by the Program Manager or the DoD Component.

2. The KPPs and KSAs included in the validated CDD, will guide the efforts leading up to PDR, and inform the Development RFP Release Decision Point. As conditions warrant, changes to KPPs and KSAs may be proposed to the applicable capability requirements validation authority. All non-KPP requirements (when delegated by the capability requirements validation authority) are subject to cost-performance trades and adjustments to meet affordability constraints. Cost performance trades (for non-KPP requirements) will be coordinated with the cognizant capability requirements validation authority.

(b) CSBs. For ACAT I and ACAT IA programs, and following CDD Validation, the Acquisition Executive of each DoD Component will form and chair a CSB with broad executive membership including senior representatives from the Office of the USD(AT&L) (including the Assistant Secretary of Defense for Acquisition), the Joint Staff (DJ8), and the DoD CIO; empowered representatives from the Service Chief of Staff and comptroller offices of the Military Department concerned; representatives from other Military Departments where appropriate; the Military Deputy to the CAE; the PEO; and other senior representatives from OSD and the DoD Component, as appropriate, in accordance with section 814 of Public Law (P.L.) 110-417 (Reference (m)). DoD Components should also form appropriate level and composition CSBs for lower ACAT programs.

1. The CSB will meet at least annually, and more frequently as capability requirements or content trades are needed, to review all requirements changes and any significant technical configuration changes for ACAT I and IA programs in development, production, and sustainment that have the potential to result in cost and schedule impacts to the program. The CSB will review potential capability requirements changes and propose to the requirements validation authority those changes that may be necessary to achieve affordability constraints on production and sustainment costs or that will result in a more cost-effective product. Changes that increase cost will not be approved unless funds are identified and schedule impacts are addressed. Program requirements will fall under the cognizance of the CSB upon receipt of a validated CDD or other validated requirements document, and before the Development RFP Release Decision Point. CSBs may also be formed earlier in the program at the discretion of the CAE.

2. The Program Manager, in consultation with the PEO, will, on at least an annual basis, identify and propose to the CSB a set of descoping options that reduce program cost and/or moderate requirements. These options will be presented to the CSB with supporting rationale addressing operational implications. The chair of the CSB will recommend to the requirements validation authority and the DAE (if an ACAT ID or MAIS program and KPPs are affected) which of these options should be implemented. Final decisions on descoping option implementation will be coordinated with the capability requirements officials.

(6) Development RFP Release Decision Point

(a) This decision point authorizes the release of RFPs for EMD and often for Low-Rate Initial Production (LRIP) options. This review is the critical decision point in an acquisition program. The program will either successfully lead to a fielded capability or fail, based on the soundness of the capability requirements, the affordability of the program, and the

executability of the acquisition strategy. The acquisition strategy is put into execution at this decision point by asking industry for bids that comply with the strategy. Release of the RFP for EMD sets in motion all that will follow. This is the last point at which significant changes can be made without a major disruption.

(b) The purpose of the Development RFP Release Decision Point is to ensure, prior to the release of the solicitation for EMD, that an executable and affordable program has been planned using a sound business and technical approach. One goal at this point is to avoid any major program delays at Milestone B, when source selection is already complete and award is imminent. Therefore, prior to release of the final RFP(s), there needs to be confidence that the program requirements to be bid against are firm and clearly stated; the risk of committing to development and presumably production has been or will be adequately reduced prior to contract award and/or option exercise; the program structure, content, schedule, and funding are executable; and the business approach and incentives are structured to both provide maximum value to the government and treat industry fairly and reasonably.

(c) At the Development RFP Release Decision Point, the Program Manager will summarize TMRR Phase progress and results, and review the Acquisition Strategy for the EMD Phase. Specific attention will be given to overall affordability; the competition strategy and incentive structure; provisions for small business utilization; source selection criteria including any “best value” determination; engineering and supportability trades and their relationship to validated capability requirements; the threat projections applicable to the system; should cost targets; risk management plans; and the basis for the program schedule.

(d) Documents required for the Development RFP Release Decision Point will be submitted no later than 45 calendar days prior to the review. These documents may have to be updated for final approval by the appropriate authority prior to Milestone B and any associated EMD contract awards based on the results of the source selection. For programs for which the DAE is the MDA, appropriate sections of the EMD RFP and its attachments will be reviewed by relevant OSD staff personnel in support of this decision point, after obtaining specific authority in writing from the cognizant contracting officer.

(e) For MDAPs and major systems, the MDA will determine the preliminary LRIP quantity at the Development RFP Release Decision Point. LRIP quantities will be the minimum needed to provide production representative test articles for operational test and evaluation (OT&E), provide efficient ramp up to full production, and maintain continuity in production pending OT&E completion. The final LRIP quantity for an MDAP (with rationale for quantities exceeding 10 percent of the total production quantity documented in the acquisition strategy) must be included in the first Selected Acquisition Report (SAR) submitted to Congress after quantity determination. Table 5 in Enclosure 1 provides details about the SAR.

(f) For incrementally fielded, software intensive programs, the MDA, will determine the preliminary scope of limited fielding, which will be adequate to evaluate fielding plan execution and support OT&E prior to a full deployment decision.

(g) Decisions resulting from the Development RFP Release Decision Point will be documented in an ADM. The ADM will document specific criteria required for Milestone C approval including needed test accomplishments, LRIP quantities, affordability requirements, and FYDP funding requirements. Table 2 in Enclosure 1 of this instruction identifies the requirements that must be satisfied at this review.

(7) PDR. During the TMRR Phase, and unless waived by the MDA, a PDR will be conducted so that it occurs before Milestone B and prior to contract award for EMD. The timing of the PDR relative to the Development RFP Release Decision Point is at the discretion of the DoD Component. The Component should balance the need for more mature design information to support source selection with the costs of either: (1) extending multiple sources' design activities from the PDR until award of the full EMD contract or (2) having a gap in development prior to EMD award. Unless waived by the MDA, PDR results will be assessed by the MDA prior to the MDA Certification pursuant to section 2366b of title 10, U.S. Code (Reference (n)) and Milestone B approval for MDAPs (hereafter, U.S. Code citations are presented as [title #] U.S.C. [section #], e.g., "10 U.S.C. 2366b"). Table 6 in Enclosure 1 of this instruction lists required waiver documentation and actions.

(8) Milestone B

(a) This milestone provides authorization to enter into the EMD Phase and for the DoD Components to award contracts for EMD. It also commits the required investment resources to the program. Most requirements for this milestone should be satisfied at the Development RFP Release Decision Point; however, if any significant changes have occurred, or if additional information not available at the Development RFP Release Decision Point could impact this decision, it must be provided at the Milestone B. Milestone B requires final demonstration that all sources of risk have been adequately mitigated to support a commitment to design for production. This includes technology, engineering, integration, manufacturing, sustainment, and cost risks. Validated capability requirements, full funding in the FYDP, and compliance with affordability goals for production and sustainment, as demonstrated through an independent cost estimate (ICE), are also required.

(b) Milestone B is normally the formal initiation of an acquisition program with the MDA's approval of the Acquisition Program Baseline (APB). The APB is the agreement between the MDA and the Program Manager and his or her acquisition chain of command that will be used for tracking and reporting for the life of the program or program increment. The APB will include the affordability caps for unit production and sustainment costs (see section 4 in Enclosure 1 of this instruction for additional policy regarding APBs). Affordability caps are established as fixed cost requirements equivalent to KPPs.

(c) At the milestone, the MDA will finalize the following if not already completed:

1. The LRIP quantity or the limited fielding scope as applicable.
2. The specific technical event-based criteria for initiating production or making deployment decisions.

3. Document decisions in an ADM.

(d) Table 2 in Enclosure 1 identifies the statutory and regulatory requirements for Milestone B.

(9) EMD Phase

(a) Purpose. The purpose of the EMD Phase is to develop, build, and test a product to verify that all operational and derived requirements have been met and to support production or deployment decisions.

(b) Phase Description

1. General. EMD completes all needed hardware and software detailed design; systemically retires any open risks; builds and tests prototypes or first articles to verify compliance with capability requirements; and prepares for production or deployment. It includes the establishment of the initial product baseline for all configuration items.

a. The system design effort usually includes a standard series of design reviews prior to test article fabrication and/or software build or increment coding. Multiple design iterations may be necessary to converge on a final design for production. The SEP, described in section 2 in Enclosure 3 of this instruction, provides the basis for design activities.

b. Post-Milestone B PDR. If a PDR prior to Milestone B has been waived, the Program Manager will plan for a PDR as soon as feasible after program initiation.

2. Developmental Test and Evaluation (DT&E). DT&E provides feedback to the Program Manager on the progress of the design process and on the product's compliance with contractual requirements. DT&E also evaluates the ability of the system to provide effective combat capability, including its ability to meet its validated and derived capability requirements, including the verification of the ability of the system to achieve KPPs and KSAs, and that initial system production and deployment and OT&E can be supported. The effort requires completion of DT&E activities consistent with the TEMP. Successful completion of adequate testing with production or deployment representative prototype test articles will normally be the primary basis for entering LRIP or Limited Deployment. Enclosure 4 includes more detailed discussions of DT&E requirements.

3. Early OT&E Events. Independent Operational Assessments, conducted by the Component operational test organization, will normally also occur during EMD. These events may take the form of independent evaluation of developmental test results or of separate dedicated test events such as Limited User Tests. Developmental and operational test activities should, to the extent feasible, be planned in conjunction with one another to provide as efficient an overall test program as possible. Enclosures 4 and 5 provide more detailed discussions of DT&E and OT&E.

(c) Preparation for Production, Deployment, and Sustainment. During EMD, the Program Manager will finalize designs for product support elements and integrate them into a comprehensive product support package. Early in the EMD Phase, the Program Manager's initial product support performance requirements allocations will be refined based on the results of engineering reviews. Later in this phase, programs will demonstrate product support performance through test, to ensure the system design and product support package meet the sustainment requirements within the affordability caps established at Milestone B.

(d) EMD Phase Completion. The EMD Phase will end when: (1) the design is stable; (2) the system meets validated capability requirements demonstrated by developmental and initial operational testing as required in the TEMP; (3) manufacturing processes have been effectively demonstrated and are under control; (4) industrial production capabilities are reasonably available; and (5) the system has met or exceeds all directed EMD Phase exit criteria and Milestone C entrance criteria. EMD will often continue past the initial production or fielding decision until all EMD activities have been completed and all requirements have been tested and verified.

(e) Concurrency between EMD and Production. In most programs for hardware intensive products, there will be some degree of concurrency between initial production and the completion of developmental testing; and perhaps some design and development work, particularly completion of software, that will be scheduled to occur after the initial production decision. Concurrency between development and production can reduce the lead time to field a system, but it also can increase the risk of design changes and costly retrofits after production has started. Program planners and decision authorities should determine the acceptable or desirable degree of concurrency based on a range of factors. In general, however, there should be a reasonable expectation, based on developmental testing of full scale EMD prototypes, that the design is stable and will not be subject to significant changes following the decision to enter production. At Milestone B, the specific technical event-based criteria for initiating production or fielding at Milestone C will be determined and included in the Milestone B ADM.

(f) Release of the Production and Deployment RFP. If the strategy and associated business arrangements planned and approved at Milestone B have been changed as a result of EMD phase activity, or if the Validated Capability Requirements have changed, an updated Acquisition Strategy will be submitted for MDA review and approval prior to the release of the RFP for competitive source selection or the initiation of sole source negotiations. In any event, an updated Acquisition Strategy will be submitted prior to Milestone C and contract award, consistent with the procedures specified in this document. Section 7 in Enclosure 2 provides additional detail about the Acquisition Strategy.

(g) Additional EMD Phase Requirements

1. Inherently Government Functions and Lead System Integrators. Program managers will stress the importance of appropriate checks and balances when contractors perform acquisition-related activities, and insist that the government will be singularly responsible for the performance of inherently governmental functions. If the Acquisition Strategy for a major system calls for the use of a lead system integrator, a contract will not be

awarded to an offeror that either has or is expected to acquire a direct financial interest in the development or construction of an individual system or an element of a system of systems within the major system under the Lead System Integrator. Exceptions may be granted by the MDA, as provided in 10 U.S.C. 2410p (Reference (n)), that require certification to the Committees on Armed Services of the Senate and House of Representatives. Table 6 in Enclosure 1 of this instruction provides details about the exception reporting.

2. Advanced Procurement of Long Lead Production Items. The MDA may authorize long lead at any point during EMD or at the Development RFP Release Decision or Milestone B, subject to the availability of appropriations. These items are procured in advance of a Milestone C production decision in order to provide for a more efficient transition to production. The amount of long lead appropriate for a given program depends on the type of product being acquired. The product's content dictates the need for early purchase of selected components or subsystems to implement a smooth production process. Long lead authorization will be documented in an ADM and limited in content (i.e., listed items) and/or dollar value within the authorizing ADM.

(10) Milestone C

(a) Milestone C is the point at which a program is reviewed for entrance into the Production and Deployment Phase or for Limited Deployment. Approval depends in part on specific criteria defined at Milestone B and included in the Milestone B ADM. The following general criteria will also be applied: an updated and approved Acquisition Strategy; demonstration that the production design is stable and will meet stated and derived requirements based on acceptable performance in developmental test; an operational assessment; mature software capability consistent with the software development schedule; no significant manufacturing risks; a validated Capability Production Document or equivalent requirements document; demonstrated interoperability; demonstrated operational supportability; costs within affordability caps; full funding in the FYDP; and properly phased production ramp up and/or fielding support.

1. In making Milestone C decisions, the MDA will consider any new validated threat environments that were not included in the Capability Production Document and might affect operational effectiveness, and may consult with the requirements validation authority as part of the production decision making process to ensure that capability requirements are current.

2. MDA decisions at Milestone C will be documented in an ADM following the review. Table 2 in Enclosure 1 identifies the statutory and regulatory requirements that will be satisfied at Milestone C.

(b) High-Cost First Article Combined Milestone B and C Decisions. Some programs, notably spacecraft and ships, will not produce prototypes during EMD for use solely as test articles because of the very high cost of each article. In this case, the first articles produced will be tested and then fielded as operational assets. These programs may be tailored by measures such as combining the development and initial production investment commitments. When this is the case, a combined Milestone B and C will be conducted. Additional decision points with

appropriate criteria may also be established for subsequent low rate production commitments that occur prior to OT&E and a Full Rate Production Decision.

(11) Production and Deployment Phase

(a) Purpose. The purpose of the Production and Deployment Phase is to produce and deliver requirements-compliant products to receiving military organizations.

(b) Phase Description. In this phase, the product is produced and fielded for use by operational units. The phase encompasses several activities and events: LRIP, Limited Deployment, OT&E, and the Full Rate Production Decision or the Full Deployment Decision followed by full rate production or full deployment. In this phase, all system sustainment and support activities are initiated. During this phase the appropriate operational authority will declare IOC when the defined operational organization has been equipped and trained and is determined to be capable of conducting mission operations. During this phase “should cost” management and other techniques will be used continuously to control and reduce cost.

1. LRIP. LRIP establishes the initial production base for the system, provides the OT&E test articles, provides an efficient ramp up to full rate production, and maintains continuity in production pending OT&E completion. LRIP for MAIS programs and other software systems is typically limited deployment or limited fielding. While this portion of the phase should be of limited duration so that efficient production rates and/or full fielding can be accomplished as soon and as economically as possible, it should be of sufficient duration to permit identification and resolution of any deficiencies prior to full rate production.

2. OT&E. The appropriate operational test organization will conduct operational testing in a realistic threat environment based on the program’s System Threat Assessment Report and appropriate scenarios. For MDAPs, MAIS programs, and other programs on the DOT&E Oversight List, the DOT&E will provide a report providing the opinion of the DOT&E as to whether the program is operationally effective, suitable, and survivable before the MDA makes a decision to proceed beyond LRIP. For programs on the DOT&E Oversight List, operational testing will be conducted in accordance with the approved TEMP. If LRIP is not conducted for programs on the DOT&E Oversight List, fully production-representative articles must nonetheless be provided for the conduct of the required operational testing. Enclosures 4 and 5 provide details about developmental and operational testing and the TEMP.

(12) Full-Rate Production Decision or Full Deployment Decision

(a) The MDA will conduct a review to assess the results of initial OT&E, initial manufacturing, and initial deployment, and determine whether or not to approve proceeding to Full-Rate Production or Full Deployment. Continuing into Full-Rate Production or Full Deployment requires demonstrated control of the manufacturing process, acceptable performance and reliability, and the establishment of adequate sustainment and support systems.

1. In making the Full Rate Production Decision or the Full Deployment Decision, the MDA will consider any new validated threat environments that might affect

operational effectiveness, and may consult with the requirements validation authority as part of the decision making process to ensure that capability requirements are current.

2. Except as specifically approved by the MDA, critical deficiencies identified in testing will be resolved prior to proceeding beyond LRIP or limited deployment. Remedial action will be verified in follow-on test and evaluation.

3. The decision to proceed into full-rate production or full deployment will be documented in an ADM. Table 2 in Enclosure 1 identifies the statutory and regulatory requirements associated with this decision.

(13) Full-Rate Production or Full Deployment. In this part of the Production and Deployment Phase, the remaining production or deployment of the product is completed, leading to Full Operational Capability or Full Deployment.

(14) Operations and Support Phase

(a) Purpose. The purpose of the Operations and Support Phase is to execute the product support strategy, satisfy materiel readiness and operational support performance requirements, and sustain the system over its life cycle (to include disposal). The Operations and Support Phase begins after the production or deployment decision and is based on an MDA-approved LCSP. Enclosure 6 includes a more detailed discussion of sustainment planning; Enclosure 7 addresses planning for human systems integration.

(b) Phase Description. The phase has two major efforts, Life-Cycle Sustainment and Disposal. The LCSP, prepared by the Program Manager and approved by the MDA, is the basis for the activities conducted during this phase.

1. Life-Cycle Sustainment. During this phase, the Program Manager will deploy the product support package and monitor its performance according to the LCSP. The LCSP may include time-phased transitions between commercial, organic, and partnered product support providers. The Program Manager will ensure resources are programmed and necessary IP deliverables and associated license rights, tools, equipment, and facilities are acquired to support each of the levels of maintenance that will provide product support; and will establish necessary organic depot maintenance capability in compliance with statute and the LCSP.

a. A successful program meets the sustainment performance requirements, remains affordable, and continues to seek cost reductions by applying “should cost” management and other techniques throughout the Operations and Support Phase. Doing so requires close coordination with the war fighting sponsor (i.e., user), resource sponsors, and materiel enterprise stake holders, along with effective management of support arrangements and contracts. During Operations and Support, the Program Manager will measure, assess, and report system readiness using sustainment metrics and implement corrective actions for trends diverging from the required performance outcomes defined in the APB and LCSP.

b. Over the system life cycle, operational needs, technology advances, evolving threats, process improvements, fiscal constraints, plans for follow-on systems, or a combination of these influences and others may warrant revisions to the LCSP. When revising the LCSP, the Program Manager will update the supportability and business case analyses, and review the most current product support requirements, senior leader guidance, and fiscal assumptions to evaluate product support changes or alternatives and determine best value.

2. Disposal. At the end of its useful life, a system will be demilitarized and disposed of in accordance with all legal and regulatory requirements and policy relating to safety (including explosives safety), security, and the environment.

e. Additional Procedures and Guidance

(1) The enclosures to this instruction contain additional acquisition policy and procedures that guide program planning.

(a) Enclosure 1 details the programmatic requirements established by statute or regulation. It defines acquisition program categories and compliance requirements for those categories and provides additional policy supporting the planning and execution of defense acquisition programs.

(b) Enclosures 2 through 11 provide specific policy and procedures applicable in various functional areas across the life cycle of the acquired system.

(c) Enclosures 12 and 13 provide specific policy and procedures applicable to Defense Business Systems and Urgent Needs.

(2) Additional guidance on best practices, lessons learned, and expectations is available in the Defense Acquisition Guidebook (Reference (1)).

6. RELEASABILITY. **Unlimited**. This instruction is approved for public release.

7. EFFECTIVE DATE. This interim instruction is effective immediately. It will expire upon re-issuance of DoD Instruction 5000.02.

References

Enclosures

1. Acquisition Program Categories and Compliance Requirements
2. Program Management
3. Systems Engineering
4. Developmental Test and Evaluation (DT&E)
5. Operational and Live Fire Test and Evaluation
6. Life-Cycle Sustainment Planning
7. Human Systems Integration (HSI)

8. Affordability Analysis And Investment Constraints
  9. Analysis of Alternatives (AOA)
  10. Cost Estimating and Reporting
  11. Requirements Applicable To All Programs Containing Information Technology (IT)
  12. Defense Business Systems (DBS)
  13. Rapid Acquisition Of Urgent Needs
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<sup>1</sup> <http://www.acq.osd.mil/chieftechnologist/publications/docs/TRA2011.pdf>

<sup>2</sup> <https://dag.dau.mil/>

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<sup>5</sup> This is a controlled document. The office of primary responsibility is the Defense Intelligence Agency, (703) 695-7353

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ENCLOSURE 1

ACQUISITION PROGRAM CATEGORIES AND COMPLIANCE REQUIREMENTS

1. PURPOSE. This enclosure:

- a. Provides the definitions and dollar thresholds of acquisition categories (ACATs) and prescribes the policy for assignment of the cognizant Milestone Decision Authority (MDA).
- b. Lists the information requirements associated with the acquisition categories in tabular format.
- c. Provides the policy and procedure applicable to acquisition program baselines and acquisition program reporting.

2. ACATs

a. Categories. An acquisition program will be categorized based on the criteria in Table 1 of this enclosure. Table 1 contains the description and decision authority for ACAT I through ACAT III programs. The Defense Acquisition Executive (DAE) or designee will review potential ACAT I and IA materiel solutions; the Component Acquisition Executive (CAE) or the individual designated by the CAE will review potential ACAT II and ACAT III materiel solutions.

b. Designation of Programs That Qualify as Both a Major Automated Information System (MAIS) Program and a Major Defense Acquisition Program (MDAP). At the DAE's discretion, a program that meets the definitions of both a MAIS program and an MDAP may be treated as an MDAP. Programs will comply with the statutory and regulatory requirements associated with the chosen designation. The DAE's determination will be documented in an Acquisition Decision Memorandum (ADM) for the program.

c. Program Reclassification

(1) The CAE will notify the DAE when an increase or estimated increase in program cost or a change in acquisition strategy will result in a possible reclassification of a formerly lower acquisition category program as an ACAT I or IA program. Acquisition category changes will be reported as soon as the DoD Component anticipates that the program's cost is within 10 percent of the minimum cost threshold of the next acquisition category level. Acquisition category reclassification will occur upon designation by the DAE.

(2) The CAE may request reclassification of an ACAT I or IA program to a lower category. The request will identify the reasons for the reduction in category level. The category reduction will become effective upon approval of the request by the DAE.

Table 1. Description and Decision Authority for ACAT I – III Programs

ACAT	Reason for ACAT Designation	Decision Authority
ACAT I	<ul style="list-style-type: none"> <li>• MDAP (10 U.S.C. 2430 (Reference (n)))                             <ul style="list-style-type: none"> <li>○ Dollar value for all increments of the program: estimated by the DAE to require an eventual total expenditure for research, development, and test and evaluation (RDT&amp;E) of more than \$480 million in Fiscal Year (FY) 2014 constant dollars or, for procurement, of more than \$2.79 billion in FY 2014 constant dollars</li> <li>○ MDA designation</li> </ul> </li> <li>• MDA designation as special interest<sup>1</sup></li> </ul>	ACAT ID: DAE or as delegated  ACAT IC: Head of the DoD Component or, if delegated, the CAE (not further delegable)
ACAT IA <sup>2,3</sup>	<ul style="list-style-type: none"> <li>• MAIS (10 U.S.C. 2445a (Reference(n))): A DoD acquisition program for an Automated Information System<sup>4</sup> (AIS) (either as a product or a service<sup>5</sup>) that is either:                             <ul style="list-style-type: none"> <li>○ Designated by the MDA as a MAIS program; or</li> <li>○ Estimated to exceed:                                     <ul style="list-style-type: none"> <li>▪ \$40 million in FY 2014 constant dollars for all expenditures, for all increments, regardless of the appropriation or fund source, directly related to the AIS definition, design, development, and deployment, and incurred in any single fiscal year; or</li> <li>▪ \$165 million in FY 2014 constant dollars for all expenditures, for all increments, regardless of the appropriation or fund source, directly related to the AIS definition, design, development, and deployment, and incurred from the beginning of the Materiel Solution Analysis Phase through deployment at all sites; or</li> <li>▪ \$520 million in FY 2014 constant dollars for all expenditures, for all increments, regardless of the appropriation or fund source, directly related to the AIS definition, design, development, deployment, operations and maintenance, and incurred from the beginning of the Materiel Solution Analysis Phase through sustainment for the estimated useful life of the system.</li> </ul> </li> </ul> </li> <li>• MDA designation as special interest<sup>1</sup></li> </ul>	ACAT IAM: DAE or as delegated  ACAT IAC: Head of the DoD Component or, if delegated, the CAE (not further delegable)
ACAT II	<ul style="list-style-type: none"> <li>• Does not meet criteria for ACAT I or IA</li> <li>• Major system (10 U.S.C. 2302d (Reference (n)))                             <ul style="list-style-type: none"> <li>○ Dollar value: estimated by the DoD Component Head to require an eventual total expenditure for RDT&amp;E of more than \$185 million in FY 2014 constant dollars, or for procurement of more than \$835 million in FY 2014 constant dollars</li> <li>○ MDA designation<sup>5</sup> (10 U.S.C. 2302 (Reference (n)))</li> </ul> </li> </ul>	CAE or the individual designated by the CAE <sup>6</sup>
ACAT III	<ul style="list-style-type: none"> <li>• Does not meet criteria for ACAT II or above</li> <li>• An AIS program that is not a MAIS program</li> </ul>	Designated by the CAE <sup>6</sup>
<p>1. The Special Interest designation is typically based on one or more of the following factors: technological complexity; congressional interest; a large commitment of resources; or the program is critical to the achievement of a capability or set of capabilities, part of a system of systems, or a joint program. Programs that already meet the MDAP and MAIS thresholds cannot be designated as Special Interest.</p> <p>2. When a MAIS program also meets the definition of an MDAP, the DAE will be the MDA unless delegated to a DoD Component or other official. The DAE will designate the program as either a MAIS or an MDAP, and the Program Manager will manage the program consistent with the designation.</p> <p>3. The MDA (either the DAE or, if delegated, the DoD Chief Information Officer (CIO) or another designee) will designate MAIS programs as ACAT IAM or ACAT IAC. MAIS programs will not be designated as ACAT II.</p> <p>4. AIS: A system of computer hardware, computer software, data or telecommunications that performs functions such as collecting, processing, storing, transmitting, and displaying information. Excluded are computer resources, both hardware and software, that are an integral part of a weapon or weapon system; used for highly sensitive classified programs (as determined by the Secretary of Defense); used for other highly sensitive information technology (IT) programs (as determined by the DoD CIO); or determined by the DAE or designee to be better overseen as a non-AIS program (e.g., a program with a low ratio of RDT&amp;E funding to total program acquisition costs or that requires significant hardware development).</p> <p>5. Acquisitions of services that satisfy or are expected to satisfy the definition of a MAIS in 10 U.S.C. 2445c, Reference (n), will comply with this instruction. All other acquisitions of services will comply with Enclosure 9 of DoD Instruction 5000.02 (Reference (b)).</p> <p>6. As delegated by the Secretary of Defense or Secretary of the Military Department.</p>		

(3) The DAE may reclassify an acquisition program at any time. The reclassification decision will be documented in an ADM.

### 3. ACQUISITION PROGRAM INFORMATION REQUIREMENTS AT MILESTONES AND OTHER DECISION POINTS

a. Table 2 lists the STATUTORY and Regulatory requirements at each of the milestones and other decision points during the acquisition process. In consultation with the appropriate stakeholders, program managers may propose for MDA approval, tailoring of Regulatory program information. MDAs will document all information tailoring decisions.

b. Each row identifies an information requirement and the source of the requirement. (Sources may refer to United States Code (U.S.C.), Public Law (P.L.), an Executive Order (E.O.), DoD Instructions (DoDIs), Directives (DoDDs), or other types of documentation. When available, the source will include paragraph (Para.), section (Sec.), or enclosure (Enc.) numbers and the reference (Ref.) identifier from the list of references in this instruction. STATUTORY items and sources appear in ALL CAPS; Regulatory items and sources appear in normal text. Requirements are in alphabetical order.

(1) A dot (●) in a cell indicates the specific applicability of the requirement to program type and life-cycle event, and represents the initial submission of information. Moving right across a row, a checkmark (✓) indicates the requirement for updated information, and another dot indicates submission of new information.

(2) Notes accompany most rows to explain the requirement, limit or extend the requirement's applicability to program type and/or life-cycle event(s), or explain any special conditions.

c. Labels for the "Life-Cycle Event" columns represent the following events:

(1) "MDD"—Materiel Development Decision

(2) "MS A"—Milestone A Decision Review

(3) "CDD Val"—Capability Development Document Validation

(4) "Dev RFP Rel"—The Development Request for Proposals (RFP) Release Decision Point conducted before Milestone B to authorize release of the RFP for the next phase

(5) "MS B"—Milestone B Decision Review

(6) "MS C"—Milestone C Decision Review

(7) "FRP/FD Dec"—The Full Rate Production (FRP) Decision or the Full Deployment (FD) Decision

(8) "Other"—An event other than the events listed above; the event will be identified in the notes associated with the row.

d. Documentation for the identified events will be submitted at least 45 calendar days before the planned review.

e. Information requirements that are finalized and approved by the responsible authority in support of the Development RFP Release Decision Point do not have to be re-submitted prior to Milestone B unless substantive changes have occurred.

f. Final milestone documents for programs reviewed at the OSD level will be submitted to the Acquisition Information Repository within 5 business days of document approval. See the Defense Acquisition Guidebook (Reference (l)) for detailed instructions.

g. In Table 2, the modifier “draft” will mean a DoD Component-approved draft. This draft will have been approved by the appropriate Component representative, but still may require OSD approval.

h. The Program Manager may submit a document prepared to satisfy the information requirements of multiple programs (instead of a program-specific document). Such substitution will require written permission from the approving authority.

i. For programs designated as Defense Business Systems (DBS) by the MDA (see Enclosure 12), several information requirements are summarized in the business case. These requirements are identified in Table 2 with the phrase: “Summarized in the Business Case.”

j. The Defense Acquisition Guidebook (Reference (l)) supports this instruction and provides best practices, lessons learned, and expectations for the required information in Table 2. The MDA will resolve issues regarding information requirements.

k. The Defense Acquisition Portal (Reference (o)) contains an additional library of policy references, regulations, best practices, and advice.

Table 2. Milestone and Phase Information Requirements

INFORMATION REQUIREMENT	PROGRAM TYPE <sup>1</sup>				LIFE-CYCLE EVENT <sup>1,2</sup>								SOURCE	APPROVAL AUTHORITY	
	MDAP	MAIS	ACAT		MDD	MS A	CDD Val	Dev RFP Rel	MS B <sup>4</sup>	MS C	FRP/FD Dec	OTHER			
			II	≤III											
NOTES															
<b>2366a/b CERTIFICATION MEMORANDUM</b>	•					•			•	•			10 U.S.C. 2366a (Ref. (n)) 10 U.S.C. 2366b (Ref. (n)) This instruction	MDA	
	STATUTORY for MDAPs at Milestones A and B. The MDA does not have authority to delegate this requirement. The associated procedures from 10 U.S.C. 2366a and 10 U.S.C. 2366b (Reference (n)) are re-stated in the Defense Acquisition Guidebook (Reference (l)), and must be followed. A memorandum similar to that required at Milestone B is a Regulatory requirement at Milestone C if Milestone C is program initiation.														
<b>Acquisition Decision Memorandum (ADM)</b>	•	•	•	•	•	•		•	•	•	•	•	This instruction	MDA	
	Regulatory. Documents MDA decisions and direction.														
<b>ACQUISITION PROGRAM BASELINE (APB)</b>	•	•	•	•				•	✓	✓	✓	✓	10 U.S.C. 2435 (Ref. (n)) DoDD 5000.01 (Ref. (a))	MDA	
	STATUTORY for MDAPs at Milestones B and C and the FRP decision; a Regulatory requirement at all other Type/Event combinations, including the required draft <sup>5</sup> at Development RFP Release. The draft <sup>5</sup> APB for the Development RFP Release Point is approved at Milestone B. See section 4 in this enclosure for requirements at other than the identified decision points. For programs responding to urgent needs, only due at the Development Milestone; preparation and staffing of APBs responding to urgent needs should not cause unnecessary delays in meeting validated warfighter capability requirements. The MDA may approve the APB for some ship programs at Milestone A.														
<b>ACQUISITION STRATEGY</b>	•	•	•	•		•		•		✓	✓		SEC. 803, P.L. 107-314 (Ref. (p)) Core instruction, para. 5.d.(2)(c) 10 U.S.C. 2350a (Ref. (n))	MDA	
	STATUTORY for MDAPs at Milestone A; else Regulatory at other events and for other program types. The Acquisition Strategy will include STATUTORY and Regulatory information. - Use the "Acquisition Strategy Outline" at <a href="https://dap.dau.mil/policy/Lists/Policy%20Documents/Attachments/3282/PDUSD-Approved.TDS_AS_Outline.docx">https://dap.dau.mil/policy/Lists/Policy%20Documents/Attachments/3282/PDUSD-Approved.TDS_AS_Outline.docx</a> . - For DBS, prepare an Acquisition Approach as part of the Business Case instead of an Acquisition Strategy (further described in paragraph 5.a.(1) in Enclosure 12 of this instruction). - For programs responding to Urgent Needs, a highly tailored strategy will include the acquisition approach; a copy of the strategy is due to the Director, JRAC, within 3 business days of MDA approval.														
<b>Table Notes:</b>								<ol style="list-style-type: none"> <li>Documentation for the identified events will be submitted no later than 45 calendar days before the planned review.</li> <li>A dot (•) in a cell indicates the specific applicability of the requirement to program type and life-cycle event, and represents the initial submission requirement. Moving right across a row, a checkmark (✓) indicates the requirement for updated information.</li> <li>All of the "Life-Cycle Events" will not necessarily apply to all "Program Types."</li> <li>Information requirements that have been finalized and approved by the responsible authority in support of the Development RFP Release Decision Point do not have to be re-submitted prior to Milestone B unless changes have occurred. In that case, updated documents will be provided.</li> <li>In this table, "draft" means a "DoD Component-approved draft."</li> </ol>							

Table 2. Milestone and Phase Information Requirements, Continued

INFORMATION REQUIREMENT	PROGRAM TYPE <sup>1</sup>				LIFE-CYCLE EVENT <sup>1,2</sup>								SOURCE	APPROVAL AUTHORITY	
	MDAP	MAIS	ACAT		MDD	MS A	CDD Val	Dev RFP Rel	MS B <sup>4</sup>	MS C	FRP/FD Dec	OTHER			
			II	≤ III											
NOTES															
<b>Affordability Analysis</b>	•	•	•	•	•	✓		✓	✓	✓	✓		Section 3 of Enc. 8 of this instruction	MDA	
	Regulatory. Prior to the Materiel Development Decision, the analysis will yield tentative cost goals and inventory goals; for Milestone A, the analysis will yield affordability goals; and for the Development RFP Release Decision Point, Milestone B, and beyond, the analysis will yield binding affordability caps.														
<b>ANALYSIS OF ALTERNATIVES (AoA)</b>	•	•	•	•		•		✓		✓		✓	40 U.S.C. 11312 (Ref. (q)) SEC. 811, P.L. 106-398 (Ref. (r)) 10 U.S.C. 2366a (Ref. (n))	MDA DCAPE assesses AoAs for ACAT ID/IAM only	
	STATUTORY for MAIS programs and all AISs, including National Security Systems (NSSs), at Milestone A, and updated when required through Milestone C (or Milestone B if there is no Milestone C). STATUTORY for MDAPs at Milestone A. Regulatory for all other marked Program Type-Event combinations. A DoD Component is responsible for conduct and approval of the AoA, as detailed in section 2 of Enclosure 9 and in paragraph 5.d.(2)(b)2 in the core instruction. The distinct assessment and approval roles of the Director of Cost Assessment and Program Evaluation (DCAPE) and MDA associated with the AoA and the selection of the materiel solution(s) are detailed in section 2 of Enclosure 9 of this instruction.														
<b>AOA Study Guidance and AOA Study Plan</b>	•	•	•	•	•								Core instruction, para. 5.d.(1)(b)	DCAPE or DoD Component Equivalent	
	Regulatory requirements to guide the AOA. AOA Study Guidance informs the preparation of the AOA Study Plan. The AOA Study Guidance must be provided to DoD Component(s) for development of the AOA Study Plan prior to the Materiel Development Decision. Consistent with the AOA Study Guidance, the lead DoD Component will prepare the AOA Study Plan and present it at the Materiel Development Decision.														
<b>BANDWIDTH REQUIREMENTS REVIEW</b>	•	•	•					•	✓	✓			SEC. 1047, P.L. 110-417 (Ref. (m))	DoD CIO	
	STATUTORY. Bandwidth requirements data will be documented in the Information Support Plan (ISP). If the ISP is waived for a program, conformance with bandwidth review will be based on data provided in the Capability Development Document (CDD), consistent with Net-Ready Key Performance Parameter guidance in the Manual for the Operation of the Joint Capabilities Integration and Development System (JCIDS) (Reference (s)) and Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 6212.01F (Reference (t)).														
<b>Table Notes:</b>															
1. A dot (•) in a cell indicates the specific applicability of the requirement to program type and life-cycle event, and represents the initial submission requirement. Moving right across a row, a checkmark (✓) indicates the requirement for updated information.						3. Documentation for the identified events will be submitted no later than 45 calendar days before the planned review.									
2. All of the "Life-Cycle Events" will not necessarily apply to all "Program Types."						4. Information requirements that have been finalized and approved by the responsible authority in support of the Development RFP Release Decision Point do not have to be re-submitted prior to Milestone B unless changes have occurred. In that case, updated documents will be provided.									
						5. In this table, "draft" means a "DoD Component-approved draft."									

Table 2. Milestone and Phase Information Requirements, Continued

INFORMATION REQUIREMENT	PROGRAM TYPE <sup>1</sup>				LIFE-CYCLE EVENT <sup>1,2</sup>								SOURCE	APPROVAL AUTHORITY
	MDAP	MAIS	ACAT		MDD	MS A	CDD Val	Dev RFP Rel	MS B <sup>4</sup>	MS C	FRP/FD Dec	OTHER		
			II	≤ III										
NOTES														
<b>BENEFIT ANALYSIS AND DETERMINATION</b>	•	•	•	•		•		•		•			15 U.S.C. 644(e) (Ref. (u)) 15 U.S.C. 657q (Ref. (u))	MDA
	STATUTORY; applies to bundled acquisitions only. Part of the Acquisition Strategy. Includes MARKET RESEARCH to determine whether consolidation of the requirements is necessary and justified. Required at Milestone C if there was no Milestone B. 15 U.S.C. 632 (Reference (u)) defines a bundled contract as a contract that is entered into to meet requirements that are consolidated in a bundling of contract requirements. The term "bundling of contract requirements" means consolidating two or more procurement requirements for goods or services previously provided or performed under separate smaller contracts into a solicitation of offers for a single contract that is likely to be unsuitable for award to a small-business concern.													
<b>Business Case</b>		•		•		•		✓		✓			Para. 5.a(1) of Enc. 12 of this instruction	MDA; with DOT&E, DASD(DT&E), and DASD(SE) as described in the Notes.
	Regulatory; for DBS programs only. The Business Case includes summaries of STATUTORY and Regulatory information. Updated for decision events post-Milestone A. By regulation, the Acquisition Approach is part of the Business Case. The draft <sup>5</sup> Acquisition Approach is due at Milestone A and approved at the Development RFP Release Decision Point. Approval authority is the MDA; the DOT&E and the Deputy Assistant Secretary of Defense for Developmental Test and Evaluation (DT&E) (DASD(DT&E)) approve test sections; the Deputy Assistant Secretary of Defense (Systems Engineering) (DASD(SE)) approves systems engineering sections. DASD(DT&E) and DASD(SE) approvals are only required for MAIS programs.													
<b>BUSINESS PROCESS REENGINEERING</b>	•	•	•	•	•	✓		✓	✓	✓			10 U.S.C. 2222 (Ref.(n)) SUBTITLE III, TITLE 40 (Ref. (q)) SEC. 811, P.L. 106-398 (Ref. (r))	MDA
	STATUTORY for programs that acquire IT; presumed to be satisfied for weapons systems with embedded IT and for command and control systems. Regulatory for other programs. Reported in the Business Case for DBS programs.													
<b>Capability Development Document (CDD)</b>	•	•	•	•		•	✓	✓		✓		✓	CJCSI 3170.01 (Ref.(j)) JCIDS Manual (Ref. (s))	JROC, JCB, or Component Validation
	Regulatory. - A draft <sup>5</sup> CDD is required at Milestone A; a validated CDD is required at the Development RFP Release Decision Point and informs Milestone B. If there are no changes, a revalidated CDD may be submitted for the Capability Production Document (CPD) required at Milestone C. - An equivalent DoD Component-validated requirements document will satisfy this requirement for certain information systems. - For approval authorities, JROC is Joint Requirements Oversight Council; JCB is Joint Capabilities Board.													
<b>Table Notes:</b>						<ol style="list-style-type: none"> <li>1. A dot (•) in a cell indicates the specific applicability of the requirement to program type and life-cycle event, and represents the initial submission requirement. Moving right across a row, a checkmark (✓) indicates the requirement for updated information.</li> <li>2. All of the "Life-Cycle Events" will not necessarily apply to all "Program Types."</li> <li>3. Documentation for the identified events will be submitted no later than 45 calendar days before the planned review.</li> <li>4. Information requirements that have been finalized and approved by the responsible authority in support of the Development RFP Release Decision Point do not have to be re-submitted prior to Milestone B unless changes have occurred. In that case, updated documents will be provided.</li> <li>5. In this table, "draft" means a "DoD Component-approved draft."</li> </ol>								

Table 2. Milestone and Phase Information Requirements, Continued

INFORMATION REQUIREMENT	PROGRAM TYPE <sup>1</sup>				LIFE-CYCLE EVENT <sup>1,2</sup>								SOURCE	APPROVAL AUTHORITY
	MDAP	MAIS	ACAT		MDD	MS A	CDD Val	Dev RFP Rel	MS B <sup>4</sup>	MS C	FRP/FD Dec	OTHER		
			II	≤ III										
NOTES														
<b>Capability Production Document (CPD)</b>	•	•	•	•						•			CJCSI 3170.01 (Ref. (j)) JCIDS Manual (Ref. (s))	JROC, JCB, or Component Validation
	Regulatory. If there are no changes, a revalidated CDD may satisfy this information requirement. - An equivalent DoD Component-validated requirements document will satisfy this requirement for certain information systems; the equivalent documents are finalized after Milestone B, to support each deployment decision.													
<b>Capstone Threat Assessment</b>	•	•	•	•								•	DIA Directive 5000.200 (Ref. (v)) DIA Instruction 5000.002 (Ref. (w))	Validated by Defense Intelligence Agency (DIA)
	Regulatory: Capstone Threat Assessments are maintained by the responsible production center and are required to be updated every 2 years, independent of acquisition decision events. Capstone Threat Assessments serve as the analytical foundation for System Threat Assessment Reports (STARs) and maintain projections of technology and adversary capability trends over the next 20 years.													
<b>CLINGER-COHEN ACT COMPLIANCE</b>	•	•	•	•		•			•	•	•		SUBTITLE III, TITLE 40 (Ref. (q)) SEC. 811, P.L. 106-398 (Ref. (r))	CIO
	STATUTORY for all programs that acquire IT; Regulatory for other programs. Required for programs responding to urgent needs. See section 3 in Enclosure 11 for amplifying guidance. A summary of required actions is in Table 9 in this enclosure.													
<b>CONSIDERATION OF TECHNOLOGY ISSUES</b>	•	•	•			•		✓					10 U.S.C. 2364 (Ref. (n))	MDA
	STATUTORY requirement to promote, monitor, and evaluate programs for the communication and exchange of technological data. Consideration of Technology Issues is normally addressed in the Acquisition Strategy. For DBS programs, summarized in the Business Case. For urgent needs, expedited consideration of technology issues will be reviewed during the COURSE OF ACTION ANALYSIS.													
<b>CONTRACT-TYPE DETERMINATION</b>	•							•	✓	•			SEC. 818, P.L. 109-364 (Ref. (x)) SEC. 811, P.L. 112-239 (Ref. (y))	MDA
	STATUTORY. - The MDA for an MDAP will conditionally approve the contract type selected for a development program at the Development RFP Release Decision Point, and give final approval at the time of Milestone B approval. The development contract type must be consistent with the level of program risk and may be either a fixed price or cost type contract. If selecting a cost-type contract, the MDA must comply with the conditions and reporting requirements listed in Table 6 in this enclosure. - The DoD MAY NOT enter into cost-type contracts for production of an MDAP unless compliant with the conditions and notifications listed in Table 6. - Completed as part of Acquisition Strategy approval.													
<b>Table Notes:</b>								3. Documentation for the identified events will be submitted no later than 45 calendar days before the planned review.						
1. A dot (•) in a cell indicates the specific applicability of the requirement to program type and life-cycle event, and represents the initial submission requirement. Moving right across a row, a checkmark (✓) indicates the requirement for updated information.								4. Information requirements that have been finalized and approved by the responsible authority in support of the Development RFP Release Decision Point do not have to be re-submitted prior to Milestone B unless changes have occurred. In that case, updated documents will be provided.						
2. All of the "Life-Cycle Events" will not necessarily apply to all "Program Types."								5. In this table, "draft" means a "DoD Component-approved draft."						

Table 2. Milestone and Phase Information Requirements, Continued

INFORMATION REQUIREMENT	PROGRAM TYPE <sup>1</sup>				LIFE-CYCLE EVENT <sup>1,2</sup>								SOURCE	APPROVAL AUTHORITY
	MDAP	MAIS	ACAT		MDD	MS A	CDD Val	Dev RFP Rel	MS B <sup>4</sup>	MS C	FRP/FD Dec	OTHER		
			II	≤ III										
NOTES														
<b>COOPERATIVE OPPORTUNITIES</b>	•	•	•	•		•		•		•			10 U.S.C. 2350a (Ref. (n)) SEC. 243, P.L. 111-383 (Ref. (z))	MDA
	STATUTORY. INTERNATIONAL INVOLVEMENT: Due at the initial milestone decision, A, B, or C. Part of the Acquisition Strategy, or summarized in the Business Case. This requirement will be satisfied via the International Involvement (II) section in the Acquisition Strategy Outline at <a href="https://dap.dau.mil/policy/Lists/Policy%20Documents/Attachments/3282/PDUSD-Approved.TDS_AS_Outline.docx">https://dap.dau.mil/policy/Lists/Policy%20Documents/Attachments/3282/PDUSD-Approved.TDS_AS_Outline.docx</a> . For programs responding to urgent needs, proven capabilities will be assessed during the COURSE OF ACTION ANALYSIS.													
<b>CORE LOGISTICS DETERMINATION / CORE LOGISTICS AND SUSTAINING WORKLOADS ESTIMATE</b>	•		•	•		•		•		•			10 U.S.C. 2464 (Ref. (n)) 10 U.S.C. 2366a & 2366b (Ref. (n)) SEC. 801, P.L. 112-81 (Ref. (aa)) Para. 3.d.(2) of Enc. 6 of this instruction	MDA/DoD Component
	STATUTORY. Only the CORE LOGISTICS DETERMINATION is required at Milestone A. Required at Milestone C if there was no Milestone B. Documented in the Life-Cycle Sustainment Plan (LCSP). For programs responding to urgent needs, only due as part of the Sustainment Approach in the Acquisition Approach at the Production Milestone. Not required for AIS programs.													
<b>Corrosion Prevention Control Plan</b>	•	•							•	✓			Sec. 15 of Enc. 3 of this instruction	CAE or as delegated
	Regulatory. Required for ACAT ID and IC programs. Approved by the CAE. Design considerations related to corrosion control are included in the Systems Engineering Plan (SEP). Required for MAIS programs if the system includes mission critical hardware that will be operated in a corrosive environment.													
<b>Cost Analysis Requirements Description (CARD)</b>	•	•				•		✓	•	✓	✓	✓	Sec. 3 of Enc. 10 of this instruction DoD 5000.4-M (Ref. (ab))	DoD Component
	Regulatory. Due any time an INDEPENDENT COST ESTIMATE (ICE) or an ECONOMIC ANALYSIS is required. Procedures are specified in section 3 of Enclosure 10 of this instruction.													
<b>Table Notes:</b>														
1. A dot (•) in a cell indicates the specific applicability of the requirement to program type and life-cycle event, and represents the initial submission requirement. Moving right across a row, a checkmark (✓) indicates the requirement for updated information.							3. Documentation for the identified events will be submitted no later than 45 calendar days before the planned review.							
2. All of the "Life-Cycle Events" will not necessarily apply to all "Program Types."							4. Information requirements that have been finalized and approved by the responsible authority in support of the Development RFP Release Decision Point do not have to be re-submitted prior to Milestone B unless changes have occurred. In that case, updated documents will be provided.							
							5. In this table, "draft" means a "DoD Component-approved draft."							

Table 2. Milestone and Phase Information Requirements, Continued

INFORMATION REQUIREMENT	PROGRAM TYPE <sup>1</sup>				LIFE-CYCLE EVENT <sup>1,2</sup>								SOURCE	APPROVAL AUTHORITY	
	MDAP	MAIS	ACAT		MDD	MS A	CDD Val	Dev RFP Rel	MS B <sup>4</sup>	MS C	FRP/FD Dec	OTHER			
			II	≤ III											
NOTES															
<b>CYBERSECURITY STRATEGY</b>	•	•	•	•		•		✓	✓	✓	✓		SEC. 811, P.L. 106-398 (Ref. (r)) 40 U.S.C. 11312 (Ref. (q)) DoDD 8500.01E (Ref. (ac))	For ACAT ID and all IA, DoD CIO Review; for all other IT and NSS programs, DoD Component approval	
	STATUTORY for all programs containing IT, including NSS. See section 6 of Enclosure 11. Is an appendix to the Program Protection Plan (PPP). Use the PPP outline ( <a href="https://dap.dau.mil/policy/Lists/Policy%20Documents/Attachments/3298/PPP_Outline_and_Guidance_FINAL.DOCX">https://dap.dau.mil/policy/Lists/Policy%20Documents/Attachments/3298/PPP_Outline_and_Guidance_FINAL.DOCX</a> ) on the Defense Acquisition Guidebook (Reference (l)) site. A draft <sup>5</sup> update is due for the Development RFP Release and is approved at Milestone B. For a DBS, includes a summary of the approved cybersecurity strategy in the Business Case. May include the approved DoD Risk Management Framework Security Plan for urgent needs.														
<b>Development RFP Release Cost Assessment</b>	•	•						•					Para. 2.a(5) of Enc. 10 of this instruction	CAPE	
	Regulatory. Procedures specified in paragraph 2.a.(5) of Enclosure 10 of this instruction.														
<b>DoD Component Cost Estimate</b>	•	•	•	•		•			•	•	•	•	Core instruction, para. 5.d.(3)(b) <u>2</u> .b Sec. 2 of Enc. 10 of this instruction	DoD Component	
	Regulatory. Mandatory for MAIS programs any time an ECONOMIC ANALYSIS is due. As required by the Component Acquisition Executive for MDAPs. See section 2 in Enclosure 10 of this instruction. For DBS programs, summarized in the Business Case.														
<b>DoD Component Cost Position</b>	•	•				•			•	•	•	•	Para. 2.e of Enc. 10 of this instruction	DoD Component	
	Regulatory. Mandatory for MDAPs and MAIS programs; documented DoD Component Cost Position must be signed by the appropriate DoD Component Deputy Assistant Secretary for Cost and Economics.														
<b>DoD Component Live Fire Test and Evaluation (LFT&amp;E) Report</b>	•		•	•							•	•	This instruction	CAE	
	Regulatory. Programs on the DOT&E Oversight List for LFT&E oversight only; due upon completion of LFT&E.														
<b>Table Notes:</b>								3. Documentation for the identified events will be submitted no later than 45 calendar days before the planned review.							
1. A dot (•) in a cell indicates the specific applicability of the requirement to program type and life-cycle event, and represents the initial submission requirement. Moving right across a row, a checkmark (✓) indicates the requirement for updated information.								4. Information requirements that have been finalized and approved by the responsible authority in support of the Development RFP Release Decision Point do not have to be re-submitted prior to Milestone B unless changes have occurred. In that case, updated documents will be provided.							
2. All of the "Life-Cycle Events" will not necessarily apply to all "Program Types."								5. In this table, "draft" means a "DoD Component-approved draft."							

Table 2. Milestone and Phase Information Requirements, Continued

INFORMATION REQUIREMENT	PROGRAM TYPE <sup>1</sup>				LIFE-CYCLE EVENT <sup>1,2</sup>							SOURCE	APPROVAL AUTHORITY	
	MDAP	MAIS	ACAT		MDD	MS A	CDD Val	Dev RFP Rel	MS B <sup>4</sup>	MS C	FRP/FD Dec			OTHER
			II	≤ III										
NOTES														
<b>DOT&amp;E REPORT ON INITIAL OPERATIONAL TEST AND EVALUATION (IOT&amp;E)</b>	•	•	•	•							•		10 U.S.C. 2399 (Ref. (n)) 10 U.S.C. 139 (Ref. (n))	DOT&E
	<p>STATUTORY; required for DOT&amp;E Oversight List programs only. The DOT&amp;E publishes the list of programs under operational test and evaluation (OT&amp;E) and LFT&amp;E oversight continuously online at <a href="https://extranet.dote.osd.mil/oversight/">https://extranet.dote.osd.mil/oversight/</a>.</p> <p>A final decision to proceed beyond LRIP or Limited Deployment may not be made until the DOT&amp;E has submitted the IOT&amp;E Report to the Secretary of Defense and the congressional defense committees have received that report. If DoD decides to proceed to operational use of the program or to make procurement funds available for the program before the MDA's FRP/FD decision, the DOT&amp;E's report will be submitted as soon as practicable after the DoD decision to proceed.</p>													
<b>ECONOMIC ANALYSIS</b>		•				•		•	•		•	•	SEC. 811, P.L. 106-398 (Ref. (r)) DoDI 7041.3 (Ref. (ad))	DoD Component
	<p>STATUTORY for MAIS. May be combined with the AOA at Milestone A. Also required at any review that is the equivalent of Milestone B or the FD Decision. For DBS programs, summarized in the Business Case.</p>													
<b>Exit Criteria</b>	•	•	•	•		•		•	✓	•			This instruction	MDA
	<p>Regulatory. Exit criteria are specific accomplishments that must be achieved before a program can proceed to the designated acquisition phase covered by the criteria. Documented in the ADM.</p>													
<b>FREQUENCY ALLOCATION APPLICATION (DD FORM 1494)</b>	•	•	•	•		•			•	•			SEC. 104, P.L. 102-538 (Ref. (ae)) 47 U.S.C. 305, 901-904 (Ref. (af))	National Telecommunications and Information Administration
	<p>STATUTORY for all systems/equipment that use the electromagnetic spectrum while operating in the United States and its possessions. Generally not applicable to DBS programs. Required for programs responding to urgent needs. The DD Form 1494, "Application for Equipment Frequency Allocation," is available from <a href="http://www.dtic.mil/whs/directives/infomgt/forms/dd/ddforms1000-1499.htm">http://www.dtic.mil/whs/directives/infomgt/forms/dd/ddforms1000-1499.htm</a>. The STATUTORY requirement for milestone decisions is met when DD Form 1494 is submitted by the Program Manager to the appropriate reviewing and approving agencies.</p>													
<b>Full Funding Certification Memorandum</b>	•	•				•			•	•	•		Para. 2.f of Enc. 10 of this instruction	MDA/CAPE
	<p>Regulatory. See paragraph 2.f of Enclosure 10 of this instruction. Must be signed by the Component Acquisition Executive and the Component Chief Financial Officer.</p>													
<p><b>Table Notes:</b></p> <p>1. A dot (•) in a cell indicates the specific applicability of the requirement to program type and life-cycle event, and represents the initial submission requirement. Moving right across a row, a checkmark (✓) indicates the requirement for updated information.</p> <p>2. All of the "Life-Cycle Events" will not necessarily apply to all "Program Types."</p> <p>3. Documentation for the identified events will be submitted no later than 45 calendar days before the planned review.</p> <p>4. Information requirements that have been finalized and approved by the responsible authority in support of the Development RFP Release Decision Point do not have to be re-submitted prior to Milestone B unless changes have occurred. In that case, updated documents will be provided.</p> <p>5. In this table, "draft" means a "DoD Component-approved draft."</p>														

Table 2. Milestone and Phase Information Requirements, Continued

INFORMATION REQUIREMENT	PROGRAM TYPE <sup>1</sup>				LIFE-CYCLE EVENT <sup>1,2</sup>							SOURCE	APPROVAL AUTHORITY	
	MDAP	MAIS	ACAT		MDD	MS A	CDD Val	Dev RFP Rel	MS B <sup>4</sup>	MS C	FRP/FD Dec			OTHER
			II	≤ III										
NOTES														
<b>GENERAL EQUIPMENT VALUATION</b>	•	•	•	•						•	✓		P.L. 101-576 (Ref. (ag)) Statement of Federal Financial Accounting Standards 23 (Ref. (ah))	MDA
	STATUTORY. A program description that identifies contract-deliverable military equipment, non-military equipment, and other deliverable items must be included in the Acquisition Strategy. The Acquisition Strategy will include plans to ensure that all deliverable equipment requiring capitalization is serially identified and valued. The capitalization thresholds are unit costs at or above \$1 million for Air Force and Navy general fund assets, and unit costs at or above \$250 thousand for all internal use software and for other equipment assets for all other general and working capital funds.													
<b>INDEPENDENT COST ESTIMATE (ICE)</b>	•	•				•			•	•	•	•	10 U.S.C. 2434 (Ref. (n)) 10 U.S.C. 2334 (Ref. (n))	DCAPE or DoD Component
	STATUTORY. See section 2 in Enclosure 10, this instruction, for MDAPs and MAIS programs. Only required for MAIS programs in advance of a report of a Critical Change pursuant to 10 U.S.C. 2445c(f) (Reference (n)) when the USD(AT&L) is the MDA, or at any other time considered appropriate by DCAPE or USD(AT&L). The DCAPE will be the approval authority for ACAT ID and IAM programs; the Component will approve ACAT IC programs following review by DCAPE.													
<b>INDEPENDENT LOGISTICS ASSESSMENT</b>	•		•						•	•	•	✓	SEC. 832, P.L. 112-81 (Ref. (aa)) Sec. 5 of Enc. 6 of this instruction	CAE
	STATUTORY for major weapon systems. For the FRP/FD assessment, required if the decision is more than 4 years after Milestone C. Assessments after FRP/FD will be accomplished at a minimum interval of every 5 years after Initial Operational Capability (IOC).													
<b>Independent Risk Assessment</b>		•		•		•			•				This instruction	MDA
	Regulatory; only for DBS programs when directed by the MDA. Results, and the Program Manager's corresponding risk mitigation plan, will be provided to the Investment Review Board (IRB) and MDA in support of milestone decisions.													
<b>INDUSTRIAL BASE CAPABILITIES CONSIDERATIONS</b>	•	•	•	•		•				✓			10 U.S.C. 2440 (Ref. (n))	MDA
	STATUTORY for MDAPs; Regulatory for others. Part of the Acquisition Strategy; summarizes the results of the industrial base capabilities' analysis. The Acquisition Strategy outline is available at <a href="https://dap.dau.mil/policy/Lists/Policy%20Documents/Attachments/3282/PDUSD-Approved.TDS_AS_Outline.docx">https://dap.dau.mil/policy/Lists/Policy%20Documents/Attachments/3282/PDUSD-Approved.TDS_AS_Outline.docx</a> .													
<b>Table Notes:</b>														
1. A dot (•) in a cell indicates the specific applicability of the requirement to program type and life-cycle event, and represents the initial submission requirement. Moving right across a row, a checkmark (✓) indicates the requirement for updated information.						3. Documentation for the identified events will be submitted no later than 45 calendar days before the planned review.								
2. All of the "Life-Cycle Events" will not necessarily apply to all "Program Types."						4. Information requirements that have been finalized and approved by the responsible authority in support of the Development RFP Release Decision Point do not have to be re-submitted prior to Milestone B unless changes have occurred. In that case, updated documents will be provided.								
						5. In this table, "draft" means a "DoD Component-approved draft."								

Table 2. Milestone and Phase Information Requirements, Continued

INFORMATION REQUIREMENT	PROGRAM TYPE <sup>1</sup>				LIFE-CYCLE EVENT <sup>1,2</sup>								SOURCE	APPROVAL AUTHORITY
	MDAP	MAIS	ACAT		MDD	MS A	CDD Val	Dev RFP Rel	MS B <sup>4</sup>	MS C	FRP/FD Dec	OTHER		
			II	≤ III										
NOTES														
<b>Information Support Plan (ISP)</b>	•	•	•	•				•		✓		✓	DoDD 4630.05 (Ref. (ai)) DoDI 4630.8 (Ref. (aj)) DoDI 8320.02 (Ref. (ak)) DoDI 8410.03 (Ref. (al))	DoD Component or as delegated
	Regulatory. Applicable to all IT, including NSS. A draft <sup>5</sup> is due for Development RFP Release; approved at Milestone B. Unless waived, updated at the Critical Design Review. The ISP of record is due prior to Milestone C; an updated ISP of record may be updated during Operations and Support. For DBS, the ISP is summarized in the Business Case. The ISP includes the Net-Centric Data Strategy													
<b>Information Technology (IT) and National Security System (NSS) Interoperability Certification</b>	•	•	•	•								•	DoDD 4630.05 (Ref. (ai))	JITC or DoD Component
	Regulatory. Applicable to all IT, including NSS. Testing completed during OT&E. The Joint Interoperability Test Command (JITC) certifies interoperability of IT with joint, multinational, and/or interagency interoperability requirements. DoD Components certify all other IT. Certification must occur prior to fielding.													
<b>Initial Capabilities Document (ICD)</b>	•	•	•	•	•								CJCSI 3170.01 (Ref. (j)) JCIDS Manual (Ref. (s))	JROC, JCB, or Component Validation
	Regulatory. Fundamental requirements document establishing validated capability requirements; required for the Materiel Development Decision for acquisition programs. An Information Systems ICD variant of the ICD may be used for information systems. Problem Statements are used for DBS programs.													
<b>Initial Threat Environment Assessment</b>	•	•	•	•	•								DIA Directive 5000.200 (Ref. (v)) DIA Instruction 5000.002 (Ref. (w))	Validated by DIA
	Regulatory for anticipated MDAP and MAIS programs; optional for all other programs at the discretion of the MDA and in consideration of Intelligence Community Resources. Supports the Materiel Development Decision and the AOA. Forms the basis for the initial STAR at Milestone A, and is superseded by the Milestone A STAR. The Initial Threat Environment Assessment provides capability developers and program managers the ability to assess mission needs and capability gaps against likely adversary threat capabilities at IOC.													
<b>INTELLECTUAL PROPERTY (IP) STRATEGY</b>	•	•	•	•		•		✓	✓	✓	✓	✓	10 U.S.C. 2320 (Ref. (n)) Para. 7.d of Enc. 2 of this instruction	MDA
	STATUTORY for major weapon systems and subsystems; Regulatory for other program types. Summarized in the Acquisition Strategy (for DBS programs, summarized in the Business Case) and presented with the Life-Cycle Support Plan during the Operations and Support Phase. For programs responding to urgent needs, due at the Development Milestone. The IP Strategy must be updated as appropriate to support and account for evolving IP considerations associated with the award and administration of all contracts throughout the system life cycle.													
<b>Table Notes:</b>								3. Documentation for the identified events will be submitted no later than 45 calendar days before the planned review.						
1. A dot (•) in a cell indicates the specific applicability of the requirement to program type and life-cycle event, and represents the initial submission requirement. Moving right across a row, a checkmark (✓) indicates the requirement for updated information.								4. Information requirements that have been finalized and approved by the responsible authority in support of the Development RFP Release Decision Point do not have to be re-submitted prior to Milestone B unless changes have occurred. In that case, updated documents will be provided.						
2. All of the "Life-Cycle Events" will not necessarily apply to all "Program Types."								5. In this table, "draft" means a "DoD Component-approved draft."						

Table 2. Milestone and Phase Information Requirements, Continued

INFORMATION REQUIREMENT	PROGRAM TYPE <sup>1</sup>				LIFE-CYCLE EVENT <sup>1,2</sup>								SOURCE	APPROVAL AUTHORITY	
	MDAP	MAIS	ACAT		MDD	MS A	CDD Val	Dev RFP Rel	MS B <sup>4</sup>	MS C	FRP/FD Dec	OTHER			
			II	≤ III											
NOTES															
<b>Item Unique Identification Implementation Plan</b>	•	•	•	•		•		✓	✓	✓			DoDI 8320.04 (Ref. (am))	CAE or as delegated	
Regulatory. Design considerations related to unique identification are included in the SEP.															
<b>Life-Cycle Mission Data Plan</b>	•	•	•	•		•		✓	✓	✓	✓		DoDD 5250.01 (Ref. (an))	DoD Component	
Regulatory; only required if dependent on Intelligence Mission Data. A draft <sup>5</sup> update is due for Development RFP Release; approved at Milestone B.															
<b>Life-Cycle Sustainment Plan (LCSP)</b>	•	•	•	•		•		✓	✓	✓	✓	✓	Core instruction, para. 5.d.(14)(a)	MDA	
Regulatory. A draft <sup>5</sup> update is due for Development RFP Release; approved at Milestone B. The LCSP is reviewed by the CAE at least every 5 years after a system's IOC. Use the LCSP outline ( <a href="https://acc.dau.mil/adl/en-US/473039/file/60445/PDUSD-Approved%20LCSP%20Outline%2009-14-2011.docx">https://acc.dau.mil/adl/en-US/473039/file/60445/PDUSD-Approved%20LCSP%20Outline%2009-14-2011.docx</a> ) on the Defense Acquisition Guidebook (Reference (I)) site. For DBS programs, a summary of life-cycle sustainment planning must be included in the Business Case. See Enclosure 6 of this instruction for details about the LCSP.															
<b>LIVE FIRE TEST AND EVALUATION (LFT&amp;E) REPORT</b>	•		•	•								•	•	10 U.S.C. 2366 (Ref. (n))	DOT&E
STATUTORY; Programs on the DOT&E Oversight List for LFT&E oversight only. Report is due as soon as practicable after testing is concluded. See related SURVIVABILITY AND LIVE FIRE TESTING STATUS REPORT in Table 6 in this enclosure. Required for programs responding to urgent needs.															
<b>LOW-RATE INITIAL PRODUCTION (LRIP) QUANTITY</b>	•		•	•				•	✓				10 U.S.C. 2400 (Ref. (n)) Core instruction, para. 5.d.(6)(e)	MDA	
STATUTORY. A preliminary quantity is determined at the Development RFP Release Decision Point, per this instruction; the finalized quantity is determined at Milestone B, per STATUTE. Quantities are documented in the ADM. For programs on the DOT&E Oversight List, LRIP quantities must equal or exceed the numbers required for testing as identified in the approved Test and Evaluation Master Plan (TEMP).															
<b>MANPOWER ESTIMATE</b>	•							•	✓	✓	✓		10 U.S.C. 2434 (Ref. (n))	DoD Component with OUSD(P&R) Review	
STATUTORY. A draft <sup>5</sup> is due for Development RFP Release; approved at Milestone B.															
<b>Table Notes:</b>															
1. A dot (•) in a cell indicates the specific applicability of the requirement to program type and life-cycle event, and represents the initial submission requirement. Moving right across a row, a checkmark (✓) indicates the requirement for updated information.							3. Documentation for the identified events will be submitted no later than 45 calendar days before the planned review.								
2. All of the "Life-Cycle Events" will not necessarily apply to all "Program Types."							4. Information requirements that have been finalized and approved by the responsible authority in support of the Development RFP Release Decision Point do not have to be re-submitted prior to Milestone B unless changes have occurred. In that case, updated documents will be provided.								
							5. In this table, "draft" means a "DoD Component-approved draft."								

Table 2. Milestone and Phase Information Requirements, Continued

INFORMATION REQUIREMENT	PROGRAM TYPE <sup>1</sup>				LIFE-CYCLE EVENT <sup>1,2</sup>								SOURCE	APPROVAL AUTHORITY
	MDAP	MAIS	ACAT		MDD	MS A	CDD Val	Dev RFP Rel	MS B <sup>4</sup>	MS C	FRP/FD Dec	OTHER		
			II	≤ III										
NOTES														
<b>MARKET RESEARCH</b>	•	•	•	•	•	✓		✓					10 U.S.C. 2377 (Ref. (n)) 15 U.S.C. 644(e)(2) (Ref. (u))	MDA
	STATUTORY. Conducted to reduce the duplication of existing technologies and products, and to understand potential materiel solutions, technology maturity, and potential sources, to assure maximum participation of small business concerns, and possible strategies to acquire them. Part of the Acquisition Strategy, or, for DBS programs, the MDA-approved Business Case. For programs responding to urgent needs, included in the Course of Action Approach at the Development Milestone.													
<b>Operational Test Agency (OTA) Report of OT&amp;E Results</b>	•	•	•	•							•	•	This instruction	OTA
	Regulatory. Required earlier than the FRP/FD decision if early operational assessments or operational assessments are conducted.													
<b>OPERATIONAL TEST PLAN (OTP)</b>	•	•	•	•								•	10 U.S.C. 2399 (Ref. (n)) Para. 3.e of Enc. 5 of this instruction	DOT&E or Component equivalent
	STATUTORY/Regulatory. An OTP, approved before the start of OT&E, is mandatory for all programs. - Approval by DOT&E is a STATUTORY requirement for programs on the DOT&E Oversight list. - DoD Component-equivalent approval is a Regulatory requirement for all other programs. - If an urgent need has been placed on DOT&E oversight, a plan for operational testing must be approved by DOT&E.													
<b>Operational Mode Summary/Mission Profile (OMS/MP)</b>	•	•	•	•		•		✓		✓			Core instruction, para. 5.d.(2)(b)3	DoD Component
	Regulatory. The OMS/MP is a Component approved acquisition document that is derived from and consistent with the validated/approved capability requirements document. The OMS/MP describes the operational tasks, events, durations, frequency and environment in which the materiel solution is expected to perform each mission and each phase of the mission. The OMS/MP will be provided to the MDA at specified decision events and to industry as part of the RFP.													
<b>Orbital Debris Mitigation Risk Report</b>	•	•	•	•					•	✓	✓	•	This instruction	MDA
	Regulatory. Space programs only. Compiled during Technology Maturation and Risk Reduction. Part of the Post-System Functional Review Reports submitted during Technology Maturation and Risk Reduction; updated and submitted for Milestones B and C, and the Full-Rate or Follow-on Production decision.													
<b>Table Notes:</b>														
1. A dot (•) in a cell indicates the specific applicability of the requirement to program type and life-cycle event, and represents the initial submission requirement. Moving right across a row, a checkmark (✓) indicates the requirement for updated information.							3. Documentation for the identified events will be submitted no later than 45 calendar days before the planned review.							
2. All of the "Life-Cycle Events" will not necessarily apply to all "Program Types."							4. Information requirements that have been finalized and approved by the responsible authority in support of the Development RFP Release Decision Point do not have to be re-submitted prior to Milestone B unless changes have occurred. In that case, updated documents will be provided.							
							5. In this table, "draft" means a "DoD Component-approved draft."							

Table 2. Milestone and Phase Information Requirements, Continued

INFORMATION REQUIREMENT	PROGRAM TYPE <sup>1</sup>				LIFE-CYCLE EVENT <sup>1,2</sup>								SOURCE	APPROVAL AUTHORITY
	MDAP	MAIS	ACAT		MDD	MS A	CDD Val	Dev RFP Rel	MS B <sup>4</sup>	MS C	FRP/FD Dec	OTHER		
			II	≤ III										
NOTES														
<b>PESHE AND NEPA/E.O. 12114 COMPLIANCE SCHEDULE</b>	•	•	•	•					•	✓	✓		42 U.S.C. 4321-4347 (Ref. (ao)) E.O. 12114 (Ref. (ap))	CAE or as delegated
	STATUTORY. The Programmatic Environment, Safety, and Occupational Health Evaluation (PESHE) and National Environmental Policy Act (NEPA) / Executive Order (E.O.) 12114 Compliance Schedule is approved by the CAE. Related design considerations must be included in the SEP; related operations or sustainment considerations after Milestone C will be included in the LCSP. For programs responding to urgent needs, only due at the Production Milestone; DoD Components will develop expedited baseline processes for these programs. Not required for software programs with no hardware component.													
<b>POST IMPLEMENTATION REVIEW (PIR)</b>	•	•	•	•								•	40 U.S.C. 11313 (Ref. (q))	Functional Sponsor in coordination with the Component CIO
	STATUTORY. Responds to statute that requires Federal Agencies to compare actual program results with established performance objectives. The PIR is a process that aggregates information needed to successfully evaluate the degree to which a capability has been achieved. The preparation of the TEMP and the MDA's decision to proceed with FRP satisfy the requirement for weapons systems. DoD Components will plan, conduct, and document the required review for IT systems and NSS post IOC (see section 4 in Enclosure 11 of this instruction).													
<b>Post-System Functional Review Report</b>	•	•	•	•								•	This instruction	MDA
	Regulatory. Space programs only. Completed during Technology Maturation and Risk Reduction.													
<b>PRESERVATION AND STORAGE OF UNIQUE TOOLING PLAN</b>	•											•	SEC. 815, P.L. 110-417 (Ref. (m))	MDA
	STATUTORY. Part of the LCSP. The MDA must approve the plan prior to Milestone C approval. The plan must identify any contract clauses, facilities, and funding required to preserve and to store the unique tooling associated with the production of the MDAP hardware through the end of the service life of the end item. See paragraph 3.d.(3) in Enclosure 6 for details.													
<b>Problem Statement</b>		•		•	•								Para. 4.a.(1)(c) in Enc. 12 of this instruction	IRB Chair
	Regulatory; for DBS programs only. A stand-alone document to support the Materiel Development Decision; thereafter, part of the Business Case. Normally, the Problem Statement should not change over time. Significant changes to the Problem Statement will require IRB Chair approval in coordination with the MDA.													
<b>Table Notes:</b>										3. Documentation for the identified events will be submitted no later than 45 calendar days before the planned review.				
1. A dot (•) in a cell indicates the specific applicability of the requirement to program type and life-cycle event, and represents the initial submission requirement. Moving right across a row, a checkmark (✓) indicates the requirement for updated information.										4. Information requirements that have been finalized and approved by the responsible authority in support of the Development RFP Release Decision Point do not have to be re-submitted prior to Milestone B unless changes have occurred. In that case, updated documents will be provided.				
2. All of the "Life-Cycle Events" will not necessarily apply to all "Program Types."										5. In this table, "draft" means a "DoD Component-approved draft."				

Table 2. Milestone and Phase Information Requirements, Continued

INFORMATION REQUIREMENT	PROGRAM TYPE <sup>1</sup>				LIFE-CYCLE EVENT <sup>1,2</sup>								SOURCE	APPROVAL AUTHORITY
	MDAP	MAIS	ACAT		MDD	MS A	CDD Val	Dev RFP Rel	MS B <sup>4</sup>	MS C	FRP/FD Dec	OTHER		
			II	≤ III										
NOTES														
<b>PROGRAM CERTIFICATION TO THE DEFENSE BUSINESS SYSTEMS MANAGEMENT COMMITTEE (DBSMC)</b>		•		•		•			•	•	•	•	10 U.S.C. 2222 (Ref. (n))	DBSMC Chair
STATUTORY; for DBS programs only. Due prior to obligation of funds for any DBS that will have a total cost in excess of \$1 million over the period of the current FYDP.														
<b>Program Charter</b>		•		•		•		✓					Para. 5.a(2) of Enc. 12 of this instruction	CAE
Regulatory; for DBS programs only. Documents the managerial methods and responsibilities for a DBS acquisition program.														
<b>Program Protection Plan (PPP)</b>	•	•	•	•		•		✓	✓	✓	✓		DoDI 5200.39 (Ref. (aq)) DoDI 5200.44 (Ref. (ar)) Para. 13.a in Enc. 3 of this instruction	MDA
Includes STATUTORY and Regulatory information. A draft <sup>5</sup> update is due for the Development RFP Release decision and is approved at Milestone B. Use the PPP outline ( <a href="https://dap.dau.mil/policy/Lists/Policy%20Documents/Attachments/3298/PPP_Outline_and_Guidance_FINAL.DOCX">https://dap.dau.mil/policy/Lists/Policy%20Documents/Attachments/3298/PPP_Outline_and_Guidance_FINAL.DOCX</a> ) on the Defense Acquisition Guidebook (Reference (I)) site. The plan includes appropriate appendixes or links to required information. See section 13 in Enclosure 3 of this instruction. For DBS programs, a summary of the PPP will be included in the Business Case.														
<b>REPLACED SYSTEM SUSTAINMENT PLAN</b>	•					•			•				10 U.S.C. 2437 (Ref. (n))	DoD Component
STATUTORY. May be submitted as early as Milestone A, but no later than Milestone B. Required when an MDAP replaces an existing system and the capability of the old system remains necessary and relevant during fielding of and transition to the new system. The plan must provide for the appropriate level of budgeting for sustainment of the old system, the schedule for developing and fielding the new system, and an analysis of the ability of the existing system to maintain mission capability against relevant threats.														
<b>Request for Proposal (RFP)</b>	•	•	•	•		•		•		•	•		FAR Subpart 15.203 (Ref. (as))	MDA is release authority
Regulatory. RFPs are issued as necessary; they include specifications and statement of work. See also DFARS subpart 201.170 (Ref. (at)) for the requirement for peer reviews.														
<b>Should-Cost Target</b>	•	•	•	•		•		•	•	•	•		Core instruction, para. 5.d.(3)(b) <u>1</u>	MDA
Regulatory. "Should-cost" is a regulatory tool designed to proactively target cost reduction and drive productivity improvement into programs. Paragraph 9.c in Enclosure 2 of this instruction provides additional detail on "should-cost."														
<b>Table Notes:</b>								3. Documentation for the identified events will be submitted no later than 45 calendar days before the planned review.						
1. A dot (•) in a cell indicates the specific applicability of the requirement to program type and life-cycle event, and represents the initial submission requirement. Moving right across a row, a checkmark (✓) indicates the requirement for updated information.								4. Information requirements that have been finalized and approved by the responsible authority in support of the Development RFP Release Decision Point do not have to be re-submitted prior to Milestone B unless changes have occurred. In that case, updated documents will be provided.						
2. All of the "Life-Cycle Events" will not necessarily apply to all "Program Types."								5. In this table, "draft" means a "DoD Component-approved draft."						

Table 2. Milestone and Phase Information Requirements, Continued

INFORMATION REQUIREMENT	PROGRAM TYPE <sup>1</sup>				LIFE-CYCLE EVENT <sup>1,2</sup>								SOURCE	APPROVAL AUTHORITY
	MDAP	MAIS	ACAT		MDD	MS A	CDD Val	Dev RFP Rel	MS B <sup>4</sup>	MS C	FRP/FD Dec	OTHER		
			II	≤ III										
NOTES														
<b>SMALL BUSINESS INNOVATION RESEARCH (SBIR)/SMALL BUSINESS TECHNOLOGY TRANSFER (STTR) PROGRAM TECHNOLOGIES</b>	•	•	•	•		•		•	•	•	•		15 U.S.C. 638 (Ref. (u))	MDA
STATUTORY. Program managers will establish goals for applying SBIR and STTR technologies in programs of record. For contracts with a value at or above \$100 million, program managers will establish a goal for the transition of Phase III technologies in subcontracting plans, and report the number and dollar amount of contracts entered into for Phase III SBIR or STTR projects. At each milestone indicated, the Program Manager will provide a detailed plan for the use of SBIR and STTR technologies and associated planned funding profile (Phase I, II, and III).														
<b>Spectrum Supportability Risk Assessment</b>	•	•	•	•		•			•	•		•	DoDI 4650.01 (Ref. (au))	Component CIO or designee
Regulatory. Applicable to all systems/equipment that use the electromagnetic spectrum in the United States and in other host nations. Due at milestone reviews and prior to requesting authorization to operate (for other than testing) in the United States or in host nations.														
<b>System Threat Assessment Report (STAR)</b>	•	•	•	•		•		✓		✓	✓		This instruction DIA Directive 5000.200 (Ref. (v)) DIA Instruction 5000.002 (Ref. (w))	- ACAT ID and IAM: Validated by DIA - ACAT IC and IAC and below: Validated by DoD Component
Regulatory. MDAP and MAIS programs require a unique, system-specific STAR. Programs on the DOT&E Oversight List require a unique, system-specific STAR, unless otherwise directed by DOT&E.														
<b>Systems Engineering Plan (SEP)</b>	•	•	•	•		•		✓	✓	✓			Sec. 2 of Enc. 3 of this instruction	DASD(SE) or Component Head (or as delegated)
Regulatory. A draft <sup>5</sup> update is due for the Development RFP Release Decision Point; approved at Milestone B. Use the SEP outline ( <a href="https://dap.dau.mil/policy/Lists/Policy%20Documents/Attachments/3283/PDUUSD-Approved.SEP%20Outline.docx">https://dap.dau.mil/policy/Lists/Policy%20Documents/Attachments/3283/PDUUSD-Approved.SEP%20Outline.docx</a> ) on the Defense Acquisition Guidebook (Reference (I)) site. DBS programs may include systems engineering planning in applicable sections of the Business Case and Program Charter. The DASD(SE) is the approval authority for MDAPs and MAIS programs; the Component Head or as delegated will approve the SEP for all other programs.														
<b>Table Notes:</b>								3. Documentation for the identified events will be submitted no later than 45 calendar days before the planned review.						
1. A dot (•) in a cell indicates the specific applicability of the requirement to program type and life-cycle event, and represents the initial submission requirement. Moving right across a row, a checkmark (✓) indicates the requirement for updated information.								4. Information requirements that have been finalized and approved by the responsible authority in support of the Development RFP Release Decision Point do not have to be re-submitted prior to Milestone B unless changes have occurred. In that case, updated documents will be provided.						
2. All of the "Life-Cycle Events" will not necessarily apply to all "Program Types."								5. In this table, "draft" means a "DoD Component-approved draft."						

Table 2. Milestone and Phase Information Requirements, Continued

INFORMATION REQUIREMENT	PROGRAM TYPE <sup>1</sup>				LIFE-CYCLE EVENT <sup>1,2</sup>								SOURCE	APPROVAL AUTHORITY
	MDAP	MAIS	ACAT		MDD	MS A	CDD Val	Dev RFP Rel	MS B <sup>4</sup>	MS C	FRP/FD Dec	OTHER		
			II	≤ III										
NOTES														
<b>TECHNOLOGY READINESS ASSESSMENT (TRA)</b>	•							•	✓	•			SEC. 205, P.L. 111-23 (Ref. (av))	ASD(R&E)
	STATUTORY. A preliminary assessment is due for the Development RFP Release Decision Point. The Assistant Secretary of Defense for Research and Engineering (ASD(R&E)) will conduct an independent review and assessment of the TRA conducted by the Program Manager and other factors to determine whether the technology in the program has been demonstrated in a relevant environment. The assessment will inform the 2366b CERTIFICATION MEMORANDUM at Milestone B (in accordance with 10 U.S.C. 2366b (Reference (n))). The TRA at Milestone C is a Regulatory requirement when Milestone C is Program Initiation.													
<b>Technology Targeting Risk Assessment</b>	•	•	•	•		•							This instruction DIA Directive 5000.200 (Ref. (v)) DIA Instruction 5000.002 (Ref. (w))	Validation by DIA or DoD Component
	Regulatory. Prepared by the DoD Component Intelligence analytical centers per DoDI O-5240.24 (Reference (aw)) and DoDI 5200.39 (Reference (aq)). Forms the analytic foundation for Counterintelligence assessments in the associated PPP. DIA will validate the report for ACAT ID and IAM; for ACAT IC, IAC, and below, the DoD Component will be the validation authority.													
<b>TERMINATION LIABILITY ESTIMATE</b>	•					•		✓		✓	✓	✓	SEC. 812, P.L. 112-239 (Ref. (y))	MDA
	STATUTORY. Part of the Acquisition Strategy that must be updated whenever necessary to satisfy this requirement. Program managers planning a contract for the development or production of an MDAP for which potential termination liability could reasonably be expected to exceed \$100 million must include an estimate of potential termination liability in the Acquisition Strategy. The estimate must include how such termination liability is likely to increase or decrease over the period of performance. The Program Manager must consider the estimate before making recommendations on decisions to enter into or terminate such contracts.													
<b>Test and Evaluation Master Plan (TEMP)</b>	•	•	•	•		•		✓	✓	✓	✓		Enclosures 4 and 5 of this instruction	See Notes for this row.
	Regulatory. A draft <sup>5</sup> update is due for the Development RFP Release Decision Point; approved at Milestone B. For DBS programs, a summary of the T&E planning for integrated developmental/operational test, jointly developed by the Program Manager, functional sponsor, and T&E community must be included in the Business Case. DOT&E will approve the TEMP for DOT&E Oversight programs (10 U.S.C. 2399, Reference (n)); DASD (DT&E) will also approve the TEMP for DT&E Engagement programs (10 U.S.C. 139b, Reference (n)); the DoD Component equivalent will approve the plan for other programs. TEMP outline guidance is located at <a href="http://www.dote.osd.mil/docs/dote-temp-guidebook/20130712_TEMP_Guide_2.1.pdf">http://www.dote.osd.mil/docs/dote-temp-guidebook/20130712_TEMP_Guide_2.1.pdf</a>													
<b>Table Notes:</b>														
1. A dot (•) in a cell indicates the specific applicability of the requirement to program type and life-cycle event, and represents the initial submission requirement. Moving right across a row, a checkmark (✓) indicates the requirement for updated information.							3. Documentation for the identified events will be submitted no later than 45 calendar days before the planned review.							
2. All of the "Life-Cycle Events" will not necessarily apply to all "Program Types."							4. Information requirements that have been finalized and approved by the responsible authority in support of the Development RFP Release Decision Point do not have to be re-submitted prior to Milestone B unless changes have occurred. In that case, updated documents will be provided.							
							5. In this table, "draft" means a "DoD Component-approved draft."							

4. APBs AND BASELINE BREACHES

a. The APB will describe the approved program. Deviations from the approved APB will be immediately reported to the MDA. Deviations are specified default thresholds for schedule and cost of:

(1) Objective schedule value plus 6 months.

(2) Objective cost value plus ten percent.

b. Table 3, on page 60, provides acquisition program baseline policy, addressing Original Baselines, Current Baselines, Baseline Deviations, and Subprograms.

c. Table 4, on page 61, provides the statutory breach and change definitions for MDAPs, MAIS programs and other major IT investment programs, and defense business systems.

(1) The MDAP definitions for significant and critical unit cost breaches are based on unit cost growth as defined in 10 U.S.C. 2433 (Reference (n)).

(2) The MAIS program definitions for significant and critical changes are based on schedule, cost, or expected performance of the program as defined in 10 U.S.C. 2445c (Reference (n)). The section 2445c critical change definition also applies to programs that are designated as Pre-MAIS programs, and to any other automated information systems that are prior to a formal acquisition decision and are expected to exceed the MAIS program thresholds in Table 1, as prescribed by 10 U.S.C. 2445a (Reference (n)).

(3) The DBS additional criteria for a critical change are based on achieving IOC within constraints defined in section 811 of P.L. 109-364 (Reference (x)).

d. The reporting requirements associated with breaches and changes are detailed in Table 6, this enclosure.

Table 3. APBs

<p><b>Original Baseline Description, Original APB, or Original Estimate</b></p>	<p><i>For all programs:</i></p> <ul style="list-style-type: none"> <li>• The first APB is approved by the MDA prior to a program entering Engineering and Manufacturing Development, or at program initiation, whichever occurs later.</li> <li>• Serves as the current baseline description until a revised APB is approved.</li> <li>• Incorporates the KPPs from the CDD, CPD (if program initiation is at Milestone C).</li> </ul> <p><i>For MDAPs:</i></p> <ul style="list-style-type: none"> <li>• The cost/unit cost estimate parameters may be revised under 10 U.S.C. 2435 (Reference (n)) only if a breach occurs that exceeds the critical cost growth threshold for the program under 10 U.S.C. 2433 (Reference (n)).</li> </ul> <p><i>For MAIS Programs:</i></p> <ul style="list-style-type: none"> <li>• The Original Estimate is the initial schedule, performance, cost baseline submitted to Congress in a MAIS Annual Report, and can only be revised under 10 U.S.C. 2445c (Reference (n)) following a Critical Change Report to Congress.             <ul style="list-style-type: none"> <li>▪ The Original Estimate is created from the objective schedule and cost values, and the performance threshold values in the first APB approved by the MDA.</li> <li>▪ The statutory term, “development cost,” will be treated the same as “total acquisition cost.”</li> </ul> </li> </ul>
<p><b>Current Baseline Description or Current APB</b></p>	<ul style="list-style-type: none"> <li>• May be revised only:             <ul style="list-style-type: none"> <li>▪ At milestone and FRP and FD decisions;</li> <li>▪ As result of a major program restructure that is fully funded and approved by the MDA;</li> <li>▪ As a result of a program deviation (breach); or</li> <li>▪ At the MDA’s discretion if fact of life program changes are so significant that managing to the existing baseline is not practical.</li> </ul> </li> <li>• Circumstances authorizing changes are limited; revisions to the current baseline estimate/APB are not automatically authorized for program changes to cost, schedule, or performance parameters.</li> <li>• Revisions to the current APB will not be authorized unless there is a significant change in program parameters.</li> <li>• A revision to the current APB will not be authorized if proposed merely to avoid a reportable breach.</li> <li>• The MDA determines whether to revise the APB.</li> </ul>
<p><b>Deviations</b></p>	<ul style="list-style-type: none"> <li>• The Program Manager will immediately notify the MDA when the Program Manager becomes aware of an impending deviation from any parameter (cost, schedule, performance, etc.).</li> <li>• Within 30 business days of occurrence of the deviation, the Program Manager will submit a Program Deviation Report that informs the MDA of the reason for the deviation and planned actions.</li> <li>• Within 90 business days of occurrence of the deviation:             <ul style="list-style-type: none"> <li>▪ The Program Manager will bring the program back within APB parameters; or</li> <li>▪ The Program Manager will submit information to the Overarching Integrated Product Team (OIPT) to inform a recommendation to the MDA on whether it is appropriate to approve a revision to an APB.</li> </ul> </li> <li>• The MDA will decide, after considering the recommendation resulting from the OIPT or equivalent Component-level review, whether it is appropriate to approve a revision to an APB.</li> </ul>
<p><b>Subprograms</b></p>	<p>When an MDAP requires the delivery of two or more categories of end items that differ significantly in form and function, subprograms may be established for baselining and reporting purposes. Once one subprogram is designated, all remaining elements (increments or components) of the program will also be appropriately organized into one or more other subprograms.</p>

Table 4. Statutory Program Breach and Change Definitions

<p><b>Significant Nunn-McCurdy Unit Cost Breaches</b> (10 U.S.C. 2433 and 2433a (Reference (n)))</p> <p>Applicable to MDAPs only</p>	<ul style="list-style-type: none"> <li>• The cost growth threshold, as it relates to the current APB, is defined to be an increase of at least 15 percent over the program acquisition unit cost (PAUC) or average procurement unit cost (APUC) for the current program as shown in the current Baseline Estimate.</li> <li>• The cost growth threshold, as it relates to the original APB, is defined to be an increase of at least 30 percent over the PAUC or APUC for the original program as shown in the original Baseline Estimate.</li> <li>• Only the current APB will be revised.</li> </ul>
<p><b>Critical Nunn-McCurdy Unit Cost Breaches</b> (10 U.S.C. 2433 (Reference (n)))</p> <p>Applicable to MDAPs only</p>	<ul style="list-style-type: none"> <li>• The cost growth threshold, as it relates to the current APB, is defined to be an increase of at least 25 percent over the PAUC or APUC for the program or subprogram as shown in the current Baseline Estimate/APB.</li> <li>• The cost growth threshold, as it relates to the original APB, is defined to be an increase of at least 50 percent over the PAUC or APUC for the program or subprogram as shown in the original Baseline Estimate/APB for the program or subprogram.</li> <li>• If the program or subprogram is certified rather than terminated, the most recent major milestone must be rescinded and a new milestone is required after certification. The program establishes a revised original Baseline Estimate/APB that reflects MDA certification and approval.</li> </ul>
<p><b>Significant Change</b> (10 U.S.C. 2445c (Reference (n)))</p> <p>Applicable to MAIS programs only</p>	<p>As it relates to the original estimate (see definition in Table 3, this enclosure):</p> <ul style="list-style-type: none"> <li>• A schedule change that will cause a delay of more than 6 months but less than 1 year;</li> <li>• An increase in the estimated development cost or full life-cycle cost for the program by at least 15 percent, but less than 25 percent; or</li> <li>• A significant, adverse change in the expected performance of the MAIS to be acquired.</li> </ul>
<p><b>Critical Change</b> (10 U.S.C. 2445c (Reference (n)))</p> <p>Applicable to MAIS programs and other major IT investment programs only</p>	<p>As it relates to the original estimate (see definition in Table 3, this enclosure):</p> <ul style="list-style-type: none"> <li>• The system has failed to achieve a FD Decision within 5 years after the Milestone A decision for the program or, if there was no Milestone A, the date when the preferred alternative is selected for the program (excluding any time during which program activity is delayed as a result of a bid protest);</li> <li>• A schedule change will cause a delay of 1 year or more;</li> <li>• The estimated development cost or full life-cycle cost for the program has increased 25 percent or more; or</li> <li>• A change in expected performance will undermine the ability of the system to perform the functions anticipated (i.e., the expected failure to meet a threshold key performance parameter).</li> </ul>
<p><b>Cost or Schedule Growth Notification for 2366a/b Certified Programs</b> (10 U.S.C. 2366a and 2366b (Reference (n)))</p> <p>Applicable to MDAPs only</p>	<ul style="list-style-type: none"> <li>• Sec. 2366a: At any time prior to Milestone B approval, if the cost estimate exceeds the cost estimate for the program submitted at the time of the certification by at least 25 percent, or the program manager determines that the period of time required for the delivery of an IOC is likely to exceed the schedule objective established pursuant to 10 U.S.C. 181 (Reference (n)), paragraph (b)(5), by more than 25 percent, the Program Manager for the program concerned will notify the MDA.</li> <li>• Sec. 2366b: The Program Manager for an MDAP that has received Milestone B certification will immediately notify the MDA of any changes to the program or a designated major subprogram of such program that alter the substantive basis for the certification of the milestone decision.</li> </ul>
<p><b>Additional Critical Change Applicable to All Defense Business Systems</b> (Sec. 811 of P.L. 109-364, Reference (x))</p>	<ul style="list-style-type: none"> <li>• ANY DBS, regardless of ACAT, that has received Milestone A approval and has not achieved IOC within 5 years after the Milestone A decision will have experienced a critical change and will be subject to the evaluation and reporting required by 10 U.S.C. 2445c (Reference (n)), and the row identified as "MAIS ASSESSMENT AND CERTIFICATION OF A CRITICAL CHANGE TO THE DEFENSE COMMITTEES" in Table 6 in this enclosure.</li> </ul> <p>NOTE: A DBS that is a MAIS program or other major IT investment program remains subject to the Significant and/or Critical Change rows above, if conditions warrant.</p>

5. REPORTING REQUIREMENTS

a. Tables 5 through 8 of this enclosure summarize STATUTORY and Regulatory reporting requirements, and specify when the reports are due.

(1) Table 5 presents recurring reporting requirements.

(2) Table 6 lists the reporting requirements established for exceptions, waivers, and alternative reporting.

(3) Table 7 summarizes Cost and Software Data Reporting System requirements.

(4) Table 8 summarizes Earned Value Management (EVM) reporting requirements.

b. In Table 5 and Table 6 of this enclosure, each row identifies an information requirement and the source of the requirement. STATUTORY items and sources appear in ALL CAPS; Regulatory items and sources appear in normal text. A dot (●) in a cell indicates the applicability of the requirement to the program type for that column.

(1) Table 5 summarizes STATUTORY and Regulatory recurring reporting requirements, and specifies when the reports are due.

Table 5. Recurring Program Reports

INFORMATION REQUIREMENT	PROGRAM TYPE				Urgent	WHEN REQUIRED	SOURCE	REPORTING PROCEDURE
	MDAP	MAIS	ACAT					
			II	≤ III				
NOTES								
<b>Defense Acquisition Executive Summary (DAES)</b>	●	●				<ul style="list-style-type: none"> <li>For MDAPs, quarterly after initial Selected Acquisition Report (SAR) submission.</li> <li>For MAIS, quarterly after the program is baselined.</li> <li>Active programs that are 75 percent or more delivered through the production phase (or 75 percent expended if RDT&amp;E only) will submit only a Unit Cost Reporting DAES pursuant to 10 U.S.C. 2433, Reference (n).</li> <li>For MDAPs, the DAES reporting requirement ceases after a termination SAR is submitted (90 percent of items delivered or 90 percent of funds are expended).</li> <li>For MAIS, DAES reporting ceases after FD is declared and a Close-out DAES is submitted.</li> </ul>	This instruction	Program Manager
	Regulatory. Identifies program issues that may impact program cost, schedule, or performance. The DAES provides a mechanism for the Department to meet Unit Cost Reporting requirements (see page 64 of this instruction) for MDAPs. Programs should begin input of basic program information, cost estimates, and any budget data into the automated DAES module of the Defense Automated Management Information Retrieval system upon submission of the Program Objective Memorandum or Budget Estimate Submission.							
<b>MAIS ANNUAL REPORT (MAR) TO CONGRESS</b>		●				<ul style="list-style-type: none"> <li>Annually for each MAIS program and each other major IT investment program for which funds are requested by the President in the budget.</li> <li>This reporting requirement applies to baselined and unbaselined MAIS.</li> <li>Due 45 business days after the President's Budget is submitted to Congress.</li> <li>Requirement terminates after FD is declared and a Close-out MAR is submitted.</li> </ul>	10 U.S.C. 2445b (Ref. (n))	- Program Manager to Senior Officials (CAE, USD(AT&L)) - USD(AT&L) to Congress
	STATUTORY. The MAR is the basis for the quarterly reports and reports on program changes required by 10 U.S.C. 2445c (Reference (n)).							
Note: A dot (●) in a cell indicates the specific applicability of the requirement to program type.								

Table 5. Recurring Program Reports, Continued

INFORMATION REQUIREMENT	PROGRAM TYPE					WHEN REQUIRED	SOURCE	REPORTING PROCEDURE
	MDAP	MAIS	ACAT		Urgent			
			II	≤ III				
NOTES								
MAIS QUARTERLY REPORT		●				<ul style="list-style-type: none"> <li>Quarterly following the initial submission of a baselined MAR and not later than 5 years after Milestone A or MDA approval of the preferred alternative.</li> <li>MAIS Quarterly Report reporting ceases after FD is declared and a Close-out MAIS Quarterly Report is submitted.</li> </ul>	10 U.S.C. 2445c (Ref. (n))	Program Manager to Senior Officials (CAE, USD(AT&L)) USD(AT&L) to Congress
	STATUTORY. This report will identify any projected variance from the Original Estimate (see Table 3 for a description of the Original Estimate). Reported via the electronic Defense Acquisition Executive Summary submission process.							
SELECTED ACQUISITION REPORT (SAR)		●				<ul style="list-style-type: none"> <li>Program initiation (normally Milestone B except for some ship programs) or MDAP designation.</li> <li>Annually (as of December) for all programs and quarterly (as of March, June, and September) on an exception basis when there is: (1) a 6-month or more schedule slip in the current estimate since the prior SAR; or (2) a unit cost increase of 15 percent or more to the current APB objective or 30 percent or more to the original APB objective.</li> <li>SAR rebaselining after a major milestone decision (i.e., Milestone C or Milestones B and C for some ship programs).</li> <li>SAR reporting requirement ceases after 90 percent of items are delivered or 90 percent of planned expenditures under the program or subprogram have been made.</li> </ul>	10 U.S.C. 2432 (Ref.(n))	Submitted by Program Manager to CAE, USD(AT&L) Submitted by USD(AT&L) to Congress
	STATUTORY. Provides the status of total program cost, schedule, and performance to Congress; provides program unit cost and unit cost breach information for a specific program.							
UNIT COST REPORT		●				<ul style="list-style-type: none"> <li>Quarterly after initial SAR submission.</li> <li>Unit Cost Reporting ceases after a termination SAR is submitted (90 percent of items delivered or 90 percent of funds are expended).</li> </ul>	10 U.S.C. 2433 (Ref. (n))	Program Manager; CAE, USD(AT&L) (see Note, this row)
	STATUTORY. Reported via the DAES submission process. The Program Manager provides the report quarterly to USD(AT&L) for the 3 quarters excluding the quarter with the annual SAR submission. The USD(AT&L) provides the report to Congress annually (included in SAR submission).							
Note: A dot (●) in a cell indicates the specific applicability of the requirement to program type.								

(2) Table 6 summarizes STATUTORY and Regulatory requirements established for exceptions, waivers, and alternative reporting. The table specifies the conditions and point in time when each report is required.

Table 6. Exceptions, Waivers, and Alternative Reporting Requirements

INFORMATION REQUIREMENT	PROGRAM TYPE					WHEN REQUIRED	SOURCE	REPORTING PROCEDURE
	MDAP	MAIS	ACAT		Urgent			
			II	≤ III				
NOTES								
<b>ALTERNATE LIVE-FIRE TEST AND EVALUATION (LFT&amp;E) PLAN</b>	●		●	●		A DoD Component-approved final draft plan is due 45 calendar days prior to the Development RFP Release decision. The final plan is required at Milestone B or as soon as practicable after program initiation.	10 U.S.C. 2366 (Ref. (n))	Program Manager to DOT&E
	STATUTORY. Only required for programs on DOT&E oversight for LFT&E list with or requesting a waiver from full-up, system-level testing.							
<b>CONGRESSIONAL NOTIFICATION OF COMPETITIVE PROTOTYPING WAIVER</b>	●					Not later than 30 calendar days after MDA authorization.	SEC. 203, P.L. 111-23 (Ref. (av))	Program Manager to MDA to Congress
	STATUTORY. The MDA may waive the competitive prototyping requirements if: <ol style="list-style-type: none"> <li>(1) The cost of producing competitive prototypes exceeds the expected life-cycle benefits (in constant dollars) of producing the prototypes, including the benefits of improved performance and increased technological and design maturity that may be achieved through competitive prototyping; or</li> <li>(2) The DoD would be unable to meet critical national security objectives without such a waiver.</li> </ol> If waived: <ol style="list-style-type: none"> <li>(1) The MDA must require that a prototype be produced before Milestone B approval if:                             <ol style="list-style-type: none"> <li>(a) The expected life-cycle benefits (in constant dollars) of producing the prototype exceed the cost.</li> <li>(b) Its production is consistent with achieving critical national security objectives.</li> </ol> </li> <li>(2) If prototyping of the system is not feasible, the program will produce prototypes for critical subsystems.</li> <li>(3) The MDA must notify the congressional defense committees in writing not later than 30 calendar days after the waiver is authorized. The notification must include the rationale for the waiver and the plan, if any, for producing a prototype.</li> <li>(4) If the basis for the waiver is excessive cost, the MDA must also submit the notification of the waiver, together with the rationale, to the Comptroller General of the U.S. at the same time it is submitted to Congress.</li> </ol>							
<b>CONGRESSIONAL NOTIFICATION OF CONDUCTING DT&amp;E WITHOUT AN APPROVED TEMP</b>	●					Not later than 30 days after any decision to conduct DT&E on an MDAP without an approved TEMP.	SEC. 904, P.L. 112-239 (Ref. (y))	Program Manager to USD(AT&L) to Congress
	STATUTORY. The Program Manager will prepare the notification and submit to USD(AT&L). The notification must include a written explanation of the basis for the decision and a timeline for getting an approved plan in place. A copy of the notification will be provided to DOT&E.							
Note: A dot (●) in a cell indicates the specific applicability of the requirement to program type.								

Table 6. Exceptions, Waivers, and Alternative Reporting Requirements, Continued

INFORMATION REQUIREMENT	PROGRAM TYPE					WHEN REQUIRED	SOURCE	REPORTING PROCEDURE
	MDAP	MAIS	ACAT		Urgent			
			II	≤ III				
NOTES								
<b>CONGRESSIONAL NOTIFICATION OF CORE LOGISTICS COMMERCIAL ITEM EXCEPTION</b>	●	●	●	●	●	Due upon determination that the system or equipment is a commercial item.	10 U.S.C. 2464 (Ref. (n))	DAE to Congress
	STATUTORY. The commercial item exception notice must include the justification for the determination.							
<b>CONGRESSIONAL NOTIFICATION OF CRITICAL COST BREACH</b>	●					STATUTORY. Due within 45 calendar days of a Program Deviation Report	10 U.S.C. 2433 (Ref. (n))	Service Secretary to Congress
<b>CONGRESSIONAL NOTIFICATION OF MAIS CANCELLATION OR SIGNIFICANT REDUCTION IN SCOPE</b>		●				Due 60 calendar days prior to an MDA cancellation decision.	SEC. 806, P.L. 109-163 (Ref. (ax))	USD(AT&L) to Congress
	STATUTORY. Provides congressional notification of an MDA decision to cancel or significantly reduce the scope of a fielded or post-Milestone C MAIS program.							
<b>CONGRESSIONAL NOTIFICATION OF MDA WAIVER OF PDR BEFORE MILESTONE B</b>	●					Due no later than 30 calendar days after the waiver is authorized.	10 U.S.C. 2366b (Ref. (n))	Program Manager to MDA to Congress
	<p>STATUTORY. The MDA may waive the 10 U.S.C. 2366b (Reference (n)), Milestone B certification requirement for PDR before Milestone B if the MDA determines that, but for such a waiver, the DoD would be unable to meet critical national security objectives.</p> <p>If the MDA authorizes a waiver:</p> <p>(1) The waiver, the determination, and the reasons for the determination will be submitted in writing to the congressional defense committees within 30 calendar days after the waiver is authorized.</p> <p>(2) The MDA will review the program not less often than annually to determine the extent to which the program otherwise satisfies the 10 U.S.C. 2366b (Reference (n)) Milestone B certification components, until such time as the MDA determines that the program satisfies all of the certification components.</p> <p>(3) Any budget request, budget justification material, budget display, reprogramming request, SAR, or other budget documentation or performance report submitted by the Secretary of Defense to the President regarding an MDAP receiving a waiver to 2366b certification will prominently and clearly indicate that such program has not fully satisfied the certification requirements for Milestone B, until such time that the MDA makes a determination that the program has satisfied all such certification requirements.</p>							
Note: A dot (●) in a cell indicates the specific applicability of the requirement to program type.								

Table 6. Exceptions, Waivers, and Alternative Reporting Requirements, Continued

INFORMATION REQUIREMENT	PROGRAM TYPE					WHEN REQUIRED	SOURCE	REPORTING PROCEDURE
	MDAP	MAIS	ACAT		Urgent			
			II	≤ III				
NOTES								
CONGRESSIONAL NOTIFICATION OF POST MILESTONE A CERTIFICATION PROGRAM DEVIATIONS	●					Due within 30 calendar days of a Program Deviation Report.	10 U.S.C. 2366a (Ref. (n))	MDA to Congress
	STATUTORY. Report will identify root causes of the growth, appropriate acquisition performance measures for the remainder of the development, and either a written certification or a plan for terminating the development or withdrawal of Milestone A approval.							
CONGRESSIONAL NOTIFICATION OF PRESERVATION AND STORAGE OF UNIQUE PRODUCTION TOOLING WAIVER	●					Due before Milestone C or at any time before the end of the item's service life if the Secretary determines the waiver is in the best interest of the DoD.	SEC. 815 of P.L. 110-417 (Ref. (m))	DAE to Congress
	STATUTORY. Based on the Secretary's written determination that such a waiver is in the best interest of the Department of Defense.							
CONGRESSIONAL NOTIFICATION OF SIGNIFICANT COST BREACH	●					STATUTORY. Due within 45 calendar days of a Program Deviation Report	10 U.S.C. 2433 (Ref. (n))	Service Secretary to Congress
COST-TYPE DEVELOPMENT CONTRACT DETERMINATION	●					Due at the Development RFP Release Decision Point upon MDA conditional approval of a cost type contract selected for a development program.	SEC. 818, P.L. 109-364 (Ref. (x))	MDA Written Determination
	STATUTORY. The MDA may authorize the use of a cost-type contract for a development program only upon a written determination that: (1) the program is so complex and technically challenging that it would not be practicable to reduce program risk to a level that would permit the use of a fixed-price contract; and (2) the complexity and technical challenge of the program are not the result of a failure to meet the requirements of 10 U.S.C. 2366b (Reference (n)). The MDA's written determination will include an explanation of the level of program risk, and, if the MDA determines that the program risk is high, the steps that have been taken to reduce program risk and the reasons for proceeding with Milestone B approval despite the high level of program risk. In considering program risk to determine whether a cost or fixed price engineering and manufacturing development contract meets the statutory requirement, the MDA will consider the following: the firmness of the capability requirements and maturity of the technology required; the experience level of potential offerors; and the capacity of industry to absorb potential overruns and the business case for industry to do so.							
Note: A dot (●) in a cell indicates the specific applicability of the requirement to program type.								

Table 6. Exceptions, Waivers, and Alternative Reporting Requirements, Continued

INFORMATION REQUIREMENT	PROGRAM TYPE					WHEN REQUIRED	SOURCE	REPORTING PROCEDURE
	MDAP	MAIS	ACAT		Urgent			
			II	≤ III				
NOTES								
<b>COST-TYPE PRODUCTION CONTRACT CERTIFICATION</b>	●					Applicable to contracts for the production of MDAPs: <ul style="list-style-type: none"> <li>Entered into on or after October 1, 2014, and for which</li> <li>The USD(AT&amp;L) has granted an exception to the prohibition against using a cost-type contract for MDAP production.</li> </ul>	SEC. 811, P.L. 112-239 (Ref. (y))	USD(AT&L) to Congress
	STATUTORY. The USD(AT&L) may only grant the exception: (1) in the case of a particular cost-type contract; (2) if the USD(AT&L) provides written certification to the congressional defense committees that a cost-type contract is needed to provide a required capability in a timely and cost-effective manner; (3) the USD(AT&L) takes affirmative steps to make sure that the use of cost-type pricing is limited to only those line items or portions of the contract where such pricing is needed to achieve the purposes of the exception; and, (4) an explanation of the steps identified under clause (3), accompanies the written certification under clause (2).							
<b>DT&amp;E EXCEPTION REPORTING</b>	●					Case 1: When an MDAP proceeds with implementing a TEMP that includes a developmental test plan disapproved by DASD(DT&E). Case 2: When an MDAP proceeds to IOT&E following an assessment by DASD(DT&E) that the program is not ready for operational testing.	SEC. 904, P.L. 112-239 (Ref. (y))	Program Manager to USD(AT&L) to Congress
	STATUTORY <ul style="list-style-type: none"> <li>The report due for Case 1 must include a description of the specific aspects of the DT&amp;E plan determined to be inadequate; an explanation of why the program disregarded the DASD(DT&amp;E)'s recommendations; and identification of the steps taken to address the concerns of the DASD(DT&amp;E).</li> <li>The report due for Case 2 must include an explanation of why the program proceeded to IOT&amp;E despite the DASD(DT&amp;E) findings; a description of the aspects of the TEMP that had to be set aside to enable the program to proceed to IOT&amp;E; a description of how the program addressed the specific areas of concern raised in the assessment of operational test readiness; and a statement of whether IOT&amp;E identified any significant shortcomings in the program.</li> <li>The USD(AT&amp;L) will compile all such exception reports and annually, not later than 60 days after the end of each fiscal year through 2018, submit a report on each case to the congressional defense committees.</li> </ul>							
<b>LEAD SYSTEM INTEGRATOR EXCEPTION CERTIFICATION</b>	●	●	●			Due if the MDA grants an exception.	10 U.S.C. 2410p (Ref. (n))	DAE to Congress
	STATUTORY. Satisfies the statutory restrictions applicable to exceptional use of a lead systems integrator (see paragraph 5.d.(9)(g)1 of the core instruction for additional discussion).							
<b>LIVE FIRE TEST AND EVALUATION WAIVER FROM FULL-UP, SYSTEM-LEVEL TESTING</b>	●		●	●		Due at Milestone B or as soon as practicable after program initiation.	10 U.S.C. 2366 (Ref. (n))	DAE to Congress
	STATUTORY. Programs on the DOT&E Oversight List for LFT&E oversight only.							
Note: A dot (●) in a cell indicates the specific applicability of the requirement to program type.								

Table 6. Exceptions, Waivers, and Alternative Reporting Requirements, Continued

INFORMATION REQUIREMENT	PROGRAM TYPE					WHEN REQUIRED	SOURCE	REPORTING PROCEDURE
	MDAP	MAIS	ACAT		Urgent			
			II	≤ III				
NOTES								
<b>MAIS CRITICAL CHANGE REPORT AND CERTIFICATION</b>		●				Not later than 60 calendar days after a MAIS Quarterly Report indicating a critical change is due to the Senior Official.	10 U.S.C. 2445c (Ref. (n))	Senior Official through OSD to Congress
	STATUTORY. When the Senior Official is not an individual within OSD, the Critical Change Report will be signed by the Senior Official and provided to the cognizant OSD official for transmittal to Congress. The signed Critical Change Report should be provided to the appropriate OSD official with draft transmittal letters addressed to the congressional defense committees no later than 5 working days before expiration of the 60-day period.							
<b>MAIS SIGNIFICANT CHANGE NOTIFICATION</b>		●				Not later than 45 calendar days after a MAIS Quarterly Report indicating a significant change is due to the Senior Official.	10 U.S.C. 2445c (Ref. (n))	Senior Official to Congress
	STATUTORY. The notification must be coordinated with the USD(AT&L), the Deputy Chief Management Officer, or the DoD CIO, as appropriate, before sending to Congress.							
<b>NUNN-MCCURDY ASSESSMENT AND CERTIFICATION</b>	●					When a Service Secretary has reported an increase in cost that equals or exceeds the critical cost growth threshold.	10 U.S.C. 2433 (Ref. (n))	USD(AT&L)
	STATUTORY. The remedial actions required when a program or subprogram experiences critical cost growth.							
<b>Program Deviation Report</b>	●	●	●	●		Regulatory requirement, due immediately when the Program Manager's current estimate exceeds one or more APB threshold values for cost, schedule, and/or performance.	Para. 4.a of this enclosure	Program Manager to MDA
<b>SURVIVABILITY AND LIVE FIRE TESTING STATUS REPORT</b>	●		●	●	●	Due as soon as practicable after a decision to proceed to operational use or to make procurement funds available for a covered system is made prior to Milestone C approval.	10 U.S.C. 2366 (Ref. (n))	DOT&E to Congress
	STATUTORY. DOT&E Oversight programs for LFT&E only. Program also requires the LFT&E Report (see LFT&E Report row on page 53 of this enclosure).							
Note: A dot (●) in a cell indicates the specific applicability of the requirement to program type.								

(3) Table 7 summarizes cost and software data reporting (CSDR) requirements, and specifies when the reports are due.

Table 7. CSDR System Requirements

REQUIRED REPORT	WHEN REQUIRED	SOURCE
Contractor Cost Data Report (CCDR)	<ul style="list-style-type: none"> <li>• All major contracts<sup>1</sup> and subcontracts, regardless of contract type, for ACAT I and IA programs and pre-MDAP and pre-MAIS programs subsequent to Milestone A approval, valued at more than \$50 million<sup>2</sup> (then-year dollars). Reporting is continued even if a program has been downgraded from an ACAT I or IA, unless waived by DCAPE.</li> <li>• Not required for contracts priced below \$20 million (then-year dollars).</li> <li>• The CCDCR requirement on high-risk or high-technical-interest contracts priced between \$20 million and \$50 million is left to the discretion of the DoD Program Manager and/or the Deputy Director, Cost Assessment (DDCA).</li> <li>• Required for major components (i.e., government furnished equipment) of an ACAT I program that are managed by the Services as ACAT II or ACAT III, and if the contract value exceeds \$50 million or if determined to be a high-risk or high-technical-interest contract priced between \$20 million and \$50 million by the Program Manager and/or the DDCA.</li> <li>• Not required under the following conditions, provided the DoD Program Manager requests and obtains approval for a reporting waiver from the DCCA: procurement of commercial systems or procurement of non-commercial systems bought under competitively-awarded firm fixed-price contracts, as long as competitive conditions continue to exist.</li> </ul>	DoD 5000.04-M-1 (Reference (ay)) This instruction
Software Resources Data Report (SRDR)	<ul style="list-style-type: none"> <li>• All major contracts and subcontracts, regardless of contract type, for contractors developing or producing software elements within ACAT I and IA programs and pre-MDAP and pre-MAIS programs subsequent to Milestone A approval for any software development element with a projected software effort greater than \$20 million (then-year dollars).</li> <li>• The SRDR requirement on high-risk or high-technical-interest contracts priced below \$20 million is left to the discretion of the DoD Program Manager and/or the DDCA.</li> </ul>	Reference (ay) This instruction
Contractor Business Data Report (CBDR)	<ul style="list-style-type: none"> <li>• Required for all contractor business entities (e.g., plant, site, or business unit) responsible for contracts with CSDR requirements.</li> </ul>	Reference (ay)
Contractor Sustainment Report	<ul style="list-style-type: none"> <li>• All major contracts<sup>1</sup> and subcontracts, regardless of contract type, valued at more than \$50 million<sup>2</sup> (then-year dollars).</li> </ul>	SEC. 832 of P.L. 112-81 (Reference (aa)) Reference (ay)
<p>Notes:</p> <ol style="list-style-type: none"> <li>1. For CSDR purposes, the term “contract” (or “subcontract”) may refer to the entire standalone contract, to a specific task or delivery order, to a series of tasks or delivery orders, to a contract line item number, or to a series of line item numbers within a contract. The intent is to capture data on contractual efforts necessary for cost estimating purposes irrespective of the particular contract vehicle used. All contracts for the procurement of end items, software, software and/or services, to support the acquisition of MDAP and MAIS programs (or ACAT II and III programs which meet the above thresholds) must include the DIDs and CDRLs necessary for the reporting of CSDR data.</li> <li>2. For CSDR purposes, contract value will represent the estimated price at contract completion (i.e., initial contract award plus all expected authorized contract changes) and be based on the assumption that all contract options will be exercised.</li> <li>3. CSDR is further discussed in section 4 of Enclosure 10.</li> </ol>		

(4) Table 8 summarizes earned value management (EVM) requirements. The Defense Acquisition Guidebook (Reference (1)) contains supporting information.

Table 8. EVM Requirements

REQUIREMENTS	WHEN REQUIRED	SOURCE
<b>For Cost/Incentive Contracts<sup>1</sup> ≥ \$50 Million<sup>2</sup></b>		
• Compliance with EVM system guidelines in ANSI/EIA-748 <sup>5</sup>	At contract award and throughout contract performance	Part 7 of Reference (c) This instruction
• EVM system formally validated and accepted by cognizant contracting officer	At contract award and throughout contract performance	
• Integrated Program Management Report (DI-MGMT-81861 <sup>3</sup> )	Monthly	
• Integrated Baseline Reviews	Within 180 calendar days after contract award, exercise of options, and major modifications	
<b>For Cost/Incentive Contracts<sup>1</sup> ≥ \$20 Million<sup>2</sup> but &lt; \$50 Million<sup>2</sup></b>		
• Compliance with EVM system guidelines in ANSI/EIA-748 <sup>5</sup> (no formal EVM system validation)	At contract award and throughout contract performance	Part 7 of Reference (c) This instruction
• Integrated Program Management Report (DI-MGMT-81861 <sup>3</sup> ) (tailoring of formats recommended)	Monthly	
• Integrated Baseline Reviews	Within 180 calendar days after contract award, exercise of options, and major modifications	
<b>For Cost/Incentive Contracts<sup>1</sup> &lt; \$20 Million<sup>2</sup></b>	At the discretion of the Program Manager based on cost-benefit analysis	Part 7 of Reference (c) This instruction
• Integrated Program Management Report, Format 6 (DI-MGMT-81861 <sup>3</sup> )	At the discretion of the Program Manager based on Government requirements	
<b>For Firm Fixed-Price Contracts<sup>1</sup> regardless of dollar value</b>	Limited Use—will be approved by the MDA based on a business case analysis	Part 7 of Reference (c) This instruction
• Integrated Program Management Report, Format 6 (DI-MGMT-81861 <sup>3</sup> )	At the discretion of the Program Manager based on Government requirements	
Notes:		
1. The term, "Contracts," includes contracts, subcontracts, intra-government work agreements, and other agreements. "Incentive" contracts include fixed-price incentive.		
2. Application thresholds are in then-year dollars.		
3. DI-MGMT-81861 = Data Item Description: Integrated Program Management Report (Reference (az))		
4. EVM shall be applied to cost/incentive Indefinite Delivery/Indefinite Quantity contracts at the task order level. For each task order follow the above table.		
5. ANSI/EIA-748 = American National Standards Institute (ANSI)/Electronic Industries Alliance (EIA) Standard 748, Earned Value Management Systems (Reference (ba)).		

6. CLINGER-COHEN ACT (CCA) COMPLIANCE. Table 9 summarizes the requirements levied on all programs that acquire IT, including NSS, at any ACAT level. Amplifying guidance for CCA compliance is detailed in section 3 of Enclosure 11.

Table 9. CCA Compliance

Actions Required to Comply With the CCA (Reference (q)) <sup>1</sup>	Applicable Program Documentation <sup>2</sup>
1. Make a determination that the acquisition supports core, priority functions of the department. <sup>3</sup>	ICD, Information Systems ICD (IS ICD), Problem Statement for a DBS, or urgent need requirements documents
2. Establish outcome-based performance measures linked to strategic goals. <sup>3,4</sup>	ICD, IS ICD, CDD, CPD, AoA, APB, the Business Case for a DBS, or the Course of Action for an urgent need
3. Redesign the processes that the system supports to reduce costs, improve effectiveness and maximize the use of commercial off-the-shelf technology. <sup>3,4</sup>	ICD, IS ICD, Concept of Operations, AoA, Program Charter and Business Case (Business Process Reengineering) for a DBS, or the Course of Action for an urgent need
4. Determine that no private sector or government source can better support the function. <sup>5</sup>	Acquisition Strategy, AoA, Business Case (AoA) for a DBS, or the Course of Action for an urgent need
5. Conduct an analysis of alternatives. <sup>4,5</sup>	AoA, Business Case (AoA) for a DBS, or the Course of Action for an urgent need
6. Conduct an economic analysis that includes a calculation of the return on investment; or for non-AIS programs, conduct a life-cycle cost estimate. <sup>4,5</sup>	Program Life-Cycle Cost Estimate, Program Economic Analysis for MAIS programs, Business Case (Economic Analysis) for a DBS, or Course of Action for an urgent need
7. Develop clearly established measures and accountability for program progress.	Acquisition Strategy, APB, TEMP, Business Case and Program Charter for a DBS, or Course of Action for an urgent need
8. Ensure that the acquisition is consistent with the DoD Information Enterprise policies and architecture, to include relevant standards.	CDD (Net Ready key performance parameter (NR-KPP)), CPD (NR-KPP), ISP, summarized in the Business Case (ISP) for a DBS, or a Course of Action and network connection documentation for an urgent need
9. Ensure that the program has a Cybersecurity Strategy that is consistent with DoD policies, standards and architectures, to include relevant standards. <sup>4</sup>	Cybersecurity Strategy, Program Protection Plan, and Course of Action Cybersecurity Approach or network connection documentation for an urgent need
10. Ensure, to the maximum extent practicable, (1) modular contracting has been used, and (2) the program is being implemented in phased, successive increments, each of which meets part of the mission need and delivers measurable benefit, independent of future increments.	Acquisition Strategy, Business Case for a DBS, or Course of Action for an urgent need
11. Register Mission-Critical and Mission-Essential systems with the DoD CIO. <sup>4,6</sup>	DoD Information Technology Portfolio Repository
<p>1. The applicability of actions required to comply with the CCA are dependent upon progress through the acquisition process. See Table 2 in this enclosure for submission requirements of applicable program documentation that correspond to the CCA compliance requirements.</p> <p>2. The system documents/information cited are examples of the most likely but not the only references for the required information. If other references are more appropriate, they may be used in addition to or instead of those cited. Include page(s) and paragraph(s), where appropriate. Urgent needs that are not designated as MDAP or MAIS programs may cite the associated urgent needs documentation to demonstrate compliance with the CCA.</p> <p>3. These requirements are presumed to be satisfied for weapons systems with embedded IT, for Command and Control Systems that are not themselves IT systems, and for urgent needs.</p> <p>4. These actions are also required to comply with section 811 of Public Law 109-364, Reference (x).</p> <p>5. For NSS, these requirements apply to the extent practicable (40 U.S.C. 11103, Reference (q), discusses NSS).</p> <p>6. <b>Mission-Critical Information System.</b> A system that meets the definitions of "information system" and "national security system" in the Clinger-Cohen Act (Reference (q)), the loss of which would cause the stoppage of warfighter operations or direct mission support of warfighter operations. (The designation of mission critical will be made by a DoD Component head, a Combatant Commander, or their designee. A financial management IT system will be considered a mission-critical IT system as defined by the USD(C).) A "Mission-Critical Information Technology System" has the same meaning as a "Mission-Critical Information System."</p> <p><b>Mission-Essential Information System.</b> A system that meets the definition of "information system" in 44 U.S.C. 3502 (Reference (bb)), that the acquiring DoD Component Head or designee determines is basic and necessary for the accomplishment of the organizational mission. (The designation of mission-essential will be made by a DoD Component head, a Combatant Commander, or their designee. A financial management IT system will be considered a mission-essential IT system as defined by the USD(C).) A "Mission-Essential Information Technology System" has the same meaning as a "Mission-Essential Information System." A "Mission-Essential Information Technology System" has the same meaning as a "Mission-Essential Information System."</p>	

ENCLOSURE 2

PROGRAM MANAGEMENT

1. PURPOSE. This enclosure describes policies applicable to Program Managers, Program Executive Officers (PEOs), and Component Acquisition Executives (CAEs) for defense acquisition programs. The enclosure also includes a range of applicable statutory and regulatory program management policies and responsibilities.

2. ACQUISITION CHAIN OF COMMAND. The chain of command for acquisition programs runs upward from the Program Manager, through the PEO to the CAE, and for Acquisition Category (ACAT) I and IA and other programs so designated, to the Defense Acquisition Executive (DAE). The responsibility and authority for program management, to include program planning and execution, is vested in these individuals. Staff and other organizations provide support to this chain of command. "Program Management" in this enclosure refers to this chain of command.

3. ASSIGNMENT OF PEOs

a. CAEs will assign acquisition program responsibilities to a PEO for all ACAT I and IA and sensitive classified programs, or for any other program determined by the CAE to require dedicated executive management.

b. A PEO must be experienced, qualified, and certified in program management, including having been a Program Manager for an ACAT I or IA program comparable to the programs he or she will be responsible for as PEO.

c. The PEO will be dedicated to executive management of assigned programs and will not have other command responsibilities.

d. The DAE may waive the provisions of paragraphs 3.a, 3.b, and/or 3.c on a case by case basis.

e. The CAE will make this assignment no later than program initiation, or within 3 months of program cost estimates reaching the dollar threshold for an ACAT I or IA program. CAEs may determine that a specific program manager will report directly, without being assigned to a PEO, whenever such direct reporting is appropriate due to program size or criticality. The CAE will notify the DAE of the decision to have a program manager report directly to the CAE, and request a waiver from the DAE of the requirement to appoint a PEO.

f. Acquisition program responsibilities for programs not assigned to a PEO or a direct-reporting program manager may be assigned to a commander of a systems, logistics, or materiel command. A program may be transferred from a PEO or direct reporting program manager to a

commander of a systems, logistics, or materiel command only after the program or increment of capability has passed Initial Operational Capability and has been approved for Full-Rate Production or Full Deployment.

#### 4. ASSIGNMENT OF PROGRAM MANAGERS

a. A program manager will be designated for each acquisition program by the appropriate CAE. This designation will be prior to Milestone A (as the Technology Maturation and Risk Reduction Phase is being planned) or the milestone associated with the entry phase specified by the Milestone Decision Authority (MDA) at the Materiel Development Decision.

b. It is essential that program managers be defense acquisition professionals with experience managing relevant engineering development or technology efforts, and who have a deep knowledge of contracting, industry perspectives, and user needs. Unless a waiver is granted by the DAE or CAE, a program manager will be experienced in similar acquisition programs and Defense Acquisition Workforce Improvement Act Level III certified in program management. Waivers should be granted rarely.

c. A Program Manager of an ACAT I or IA program should be assigned to the position during the planning leading up to a milestone or decision point initiating a phase of the acquisition process, lead the effort to have that phase approved, and manage the execution of that phase. One measure of a program manager's performance should be the successful execution of a phase of the program he or she planned and the MDA has approved. Program managers will be assigned for at least 4 years or until completion of the phase of the program that occurs closest in time to the date on which the person has served in the position for 4 years.

d. Program managers for ACAT II and other significant non-major programs will be assigned for not less than 3 years.

5. PROGRAM MANAGEMENT RESPONSIBILITIES. Program managers direct the development, production, and deployment of new defense systems. Management activities will be designed to achieve the cost, schedule, and performance parameters specified in the MDA-approved Acquisition Program Baseline (APB). The following tools will be used to facilitate effective program planning and execution.

#### 6. PROGRAM OFFICE STRUCTURE AND ORGANIZATIONS

a. Program Office Structure. It is program management's responsibility to fully understand the skills and capacity required for successful program execution and for the CAE to provide those skills to ensure that the program executes successfully. For new starts, program managers will establish program offices as soon as possible after their selection. Program offices for MDAP and MAIS programs will be staffed in key leadership positions with military or DoD civilian employees qualified in accordance with DoD Instruction 5000.66 (Reference (bc)), as

amended by the Under Secretary of Defense for Acquisition, Technology and Logistics' policy memorandum dated November 8, 2013 (Reference (bd)). Key leadership positions include: the Program Manager; Deputy Program Manager; the Chief Engineer/Lead Systems Engineer; the Chief Developmental Tester; the Program Lead Contracting Officer; the Product Support Manager; and the Program Lead Business Financial Manager.

b. Joint Program Office Organization

(1) A Joint Program Office will be established when a defense acquisition program involves the satisfaction of validated capability requirements from multiple DoD Components and/or international partners, and is funded by more than one Component or partner during any phase of the acquisition process. In most joint programs, a lead Component will be designated to manage the acquisition process and act as the acquisition agent for the participating DoD Components. The participating Components, those with a requirement for the program's products, support and participate with the lead DoD Component in managing the acquisition process. Joint programs will be managed in accordance with the provisions of a memorandum of agreement, and with the lead DoD Component's acquisition procedures and acquisition chain of command, unless directed otherwise by the DAE.

(2) DoD Components will neither terminate nor substantially reduce participation in joint MDAP and MAIS programs without capability requirements validation authority review and DAE approval. The DAE may require a DoD Component to continue some or all funding, as necessary, to sustain the joint program in an efficient manner, despite approving a request to terminate or reduce participation. Memorandums of agreement between DoD Components should address termination or reduced participation by any parties to the agreement. Substantial reduction will be determined by the MDA in coordination with the requirements validation authority, and is defined as a funding or quantity decrease that impacts the viability of the program and/or significantly increases the costs to the other participants in the program.

7. ACQUISITION STRATEGIES

a. Overview. The Program Manager will develop and execute an approved Acquisition Strategy. This document is the Program Manager's plan for program execution across the entire program life cycle. It is a comprehensive, integrated plan that identifies the acquisition approach, and describes the business, technical, and support strategies that the Program Manager plans to employ to manage program risks and meet program objectives. The strategy evolves over time and should continuously reflect the current status and desired goals of the program. The Acquisition Strategy defines the relationship between the acquisition phases and work efforts, and key program events such as decision points, reviews, contract awards, incentive structure, test activities, production lot or delivery quantities, operational deployment objectives, and any planned international cooperation and exportability. The strategy must reflect the Program Manager's understanding of the business environment; technical alternatives; small business strategy; costs, risks and risk mitigation approach; opportunities in the domestic and international markets; and the plan to support successful delivery of the capability at an affordable life-cycle price, on a realistic schedule.

b. Business Approach and Risk Management. The business approach detailed in the Acquisition Strategy should be designed to manage the risks associated with the product being acquired. It should fairly allocate risk between industry and the government. The approach will be based on a thorough understanding of the risks associated with the product being acquired and the steps that should be taken to reduce and manage that risk. The business approach should be based on market analysis that considers market capabilities and limitations. The contract type and incentive structure should be tailored to the program and designed to motivate industry to perform in a manner that rewards achievement of the government's goals. The incentives in any contract strategy should be significant enough to clearly promote desired contractor behavior and outcomes the government values, while also being realistically attainable.

c. Competition. The Acquisition Strategy will address how program management will create and sustain a competitive environment, from program inception through sustainment. Program management should use both direct competition at various levels and indirect means to create competitive environments that encourage improved performance and cost control. Decisions made in the early phases of the acquisition process can either improve or reduce program management's ability to maintain a competitive environment throughout the life cycle of a program. Strategies to be considered include: competitive prototyping, dual sourcing, open systems architectures that enable competition for upgrades, acquisition of complete technical data packages, and competition at the subsystem level. This also includes providing opportunities for small business and organizations employing the disabled.

d. Intellectual Property (IP) Strategy and Open Systems/Architectures. Program management must establish and maintain an IP Strategy to identify and manage the full spectrum of IP and related issues (e.g., technical data and computer software deliverables, patented technologies, and appropriate license rights) from the inception of a program and throughout the life cycle. The IP Strategy will describe, at a minimum, how program management will assess program needs for, and acquire competitively whenever possible, the IP deliverables and associated license rights necessary for competitive and affordable acquisition and sustainment over the entire product life cycle, including by integrating, for all systems, the IP planning elements required by subpart 207.106 (S-70) of the Defense Federal Acquisition Regulation Supplement (Reference (at)) for major weapon systems and subsystems thereof. The IP Strategy will be updated throughout the entire product life cycle, summarized in the Acquisition Strategy, and presented with the Life-Cycle Sustainment Plan during the Operations and Support Phase. Program management is also responsible for evaluating and implementing open systems architectures, where cost effective, and implementing a consistent IP Strategy. This approach integrates technical requirements with contracting mechanisms and legal considerations to support continuous availability of multiple competitive alternatives throughout the product life cycle.

8. PROGRAM BASELINE DEVELOPMENT AND MANAGEMENT. The Program Manager is responsible for developing the APB. The APB (see section 4 in Enclosure 1 of this instruction) is a summary of the program cost, schedule, and performance baselines, and is the fundamental agreement between the MDA, the CAE (if applicable), the PEO, and the Program

Manager. The APB serves as the basis for reporting to the MDA through the DoD management information system.

## 9. PROGRAM MANAGEMENT TOOLS

a. Earned Value Management (EVM). Program Managers will employ EVM unless its use is waived by the CAE. EVM is one of DoD's and industry's most powerful program planning and management tools. It is normally used in conjunction with cost plus and fixed-price incentive contracts. The purpose of EVM is to ensure sound planning and resourcing of all tasks required for contract performance. It promotes an environment where contract execution data is shared between project personnel and government oversight staff and in which emerging problems are identified, pinpointed, and acted upon as early as possible. EVM provides a disciplined, structured, objective, and quantitative method to integrate technical work scope, cost, and schedule objectives into a single cohesive contract baseline plan called a Performance Measurement Baseline for tracking contract performance.

### b. Risk Management

(1) The Program Manager is responsible for implementing effective risk management and tracking to include the identification of all known risks, root cause assessments, probability of occurrence, and consequences of occurrence (in terms of cost, schedule, and performance) if not mitigated.

(2) Program Managers are responsible for prioritizing programmatic risks and mitigating them to the extent possible within program constraints. Most of program management is about the process of eliminating programmatic risk over the life of the program. Formal risk management is one tool to accomplish that objective. Top program risks and associated risk mitigation plans will be detailed in the program acquisition strategy and presented at all relevant decision points and milestones. Program Managers will avoid overly optimistic risk projections that cannot be supported by facts and data.

### c. Cost Baseline Control and Use of "Should Cost" Management

(1) For Major Defense Acquisition Programs (MDAPs) and Major Automated Information System (MAIS) programs, it is DoD policy to budget to the Director of Cost Assessment and Program Evaluation Independent Cost Estimate (ICE) unless an alternative estimate is specifically approved by the MDA. However, program managers will develop a "should cost" estimate as a management tool to control and reduce cost. Program managers should not allow the ICE to become a self-fulfilling prophecy. "Should Cost" is a management tool designed to proactively target cost reduction and drive productivity improvement into programs. "Should Cost" management challenges managers to identify and achieve savings below budgeted most-likely costs. "Should Cost" analysis can be used during contract negotiations (particularly for sole source procurements), and throughout program execution including sustainment. Program managers are to proactively seek out and eliminate low-value-added or unnecessary elements of program cost, to motivate better cost performance wherever

possible, and to reward those that succeed in achieving those goals. “Should Cost” estimates used in contract negotiations will be based on the government’s reasonable expectation of successful contractor performance, consistent with the contractor’s previous experience and other relevant data. Realized should cost savings will be retained at the lowest organizational level possible and applied to priority needs. “Should Cost” applies to programs in all acquisition categories, in all phases of the product’s life cycle, and to all elements of program cost.

(2) Program management will develop, own, track, and report against “Should Cost Targets.” Estimates and results will be provided at milestone reviews and at specified decision points. For MDAP and MAIS programs, program managers will report progress against should cost goals at Defense Acquisition Executive Summary reviews.

## 10. INTERNATIONAL ACQUISITION AND EXPORTABILITY

a. Program management is responsible for integrating international acquisition and exportability considerations into the program’s Acquisition Strategy at each major milestone or decision point. Program management will consider the potential demand and likelihood of cooperative development or production, Direct Commercial Sales, or Foreign Military Sales early in the acquisition planning process; and where appropriate, program managers will pursue cooperative opportunities and international involvement throughout the acquisition life cycle to enhance international cooperation and improve interoperability in accordance with DoD Instruction 2010.06 (Reference (be)).

### b. International Cooperative Program Management

(1) An international cooperative program (ICP) is any acquisition program or technology project that includes participation by the U.S. and one or more foreign nations, through an international agreement, during any phase of a system’s life cycle. When it is applicable, program management is encouraged to use the streamlined procedures in the Defense Acquisition Guidebook (Reference (l)), for review and approval rather than the procedures in DoD Directive 5530.3 (Reference (bf)). All ICPs will consider applicable U.S.-ratified materiel international standardization agreements in accordance with Chairman of the Joint Chiefs of Staff Instruction 3170.01H (Reference (j)), and fully comply with foreign disclosure and program protection requirements. Programs containing classified information will have a Delegation of Disclosure Authority Letter or other written authorization issued by the DoD Component’s cognizant foreign disclosure office prior to entering discussions with potential foreign partners.

(2) DoD Components will notify and obtain the approval of the DAE for MDAP and MAIS programs before terminating or substantially reducing participation in ICPs under signed international agreements. The DAE may require the DoD Component to continue to provide some or all of the funding for that program. Substantial reductions are defined as a funding or quantity decreases that impacts the viability of the program and/or significantly increases the costs to the other participants in the program.

c. Any foreign military sales or direct commercial sales of major defense equipment prior to successful completion of operational test and evaluation require Under Secretary of Defense for Acquisition, Technology and Logistics approval (i.e., a Yockey Waiver). (Details of this requirement are found in paragraph C5.1.8.3. in the Security Assistance Management Manual (Reference (bg))).

## 11. INDUSTRIAL BASE ANALYSIS AND CONSIDERATIONS

a. Industrial base analysis is a continuing process with two primary components, both of which rely in part on information from program management. The first gathers program specific industrial base information to create the appropriate acquisition strategy for a program; the second engages throughout the life cycle of the program to provide feedback and updates. The objective is to ensure that the Department can:

- (1) Identify and support economic and stable development and production rates.
- (2) Identify and mitigate industrial capabilities risks such as single points of failure and unreliable suppliers.
- (3) Avoid, to the maximum extent practicable, lock-in to sole and single source suppliers at any tier.
- (4) Support resilience of critical defense industrial base capabilities.
- (5) Support DoD's management of defense procurement surges and contractions.

b. Program management is responsible for incorporating industrial base analysis, to include capacity and capability considerations, into acquisition planning and execution. The industrial base considerations should be documented in the Acquisition Strategy and include identification of industrial capability problems (e.g., access to raw materials, export controls, production capabilities) that have the potential to impact the DoD near- and long-term, and identification of mitigation strategies that are within the scope of program management. Program management provided information is aggregated with other sources of information at CAE and DAE levels to inform Service and Department level industrial base decisions.

## 12. LIFE-CYCLE MANAGEMENT OF INFORMATION AND DATA PROTECTION.

Program managers will ensure that all program office documents and records, regardless of media or security classification, are created, maintained, used, and disposed of or preserved in accordance with DoD Instruction 5015.02 (Reference (bh)) and DoD 5015.02-STD (Reference (bi)).

ENCLOSURE 3

SYSTEMS ENGINEERING

1. PURPOSE. This enclosure describes the policies and procedures regarding the application of systems engineering to defense acquisition. Systems engineering provides the integrating technical processes and design leadership to define and balance system performance, life-cycle cost, schedule, risk, and system security within and across individual systems and programs. The Program Manager, with support from the Lead Systems Engineer, will embed systems engineering in program planning and execution to support the entire system life cycle.

2. SYSTEMS ENGINEERING PLAN

a. Program Managers will prepare a Systems Engineering Plan (SEP) as a management tool to guide the system engineering activities on the program. The SEP will be submitted for approval for each milestone review, beginning with Milestone A. At each milestone and at the Development Request for Proposal (RFP) Release Decision Point, the SEP will support the acquisition strategy, including the program interdependencies, and communicate the overall technical approach to balance system performance, life-cycle cost, and risk in addressing warfighter needs. The SEP will describe the program's overall technical approach, including key technical risks, processes, resources, organization, metrics, and design considerations. It will also detail the timing and criteria for the conduct of technical reviews. The use of mandatory tables in the SEP is intended to support more detailed technical planning during the system life cycle in order to provide effective management and control of the program's technical progress and the execution of risk mitigation activities. The SEP will address system integration with existing and approved architectures and capabilities. Program managers will identify and manage risk of external dependencies which are outside their span of control in order to ensure timely design, development, deployment, and sustainment of the system. Program managers will document interface requirements and interface products to track interdependent program touch points. The technical planning documented in the SEP will guide the details in the program's schedule. Program managers should include the SEP (either an approved Plan or a draft Plan) in the RFP as either guidance or a compliance document depending on the maturity of the plan and the acquisition strategy.

b. The Deputy Assistant Secretary of Defense (Systems Engineering) (DASD(SE)) will review and approve the SEP for all Major Defense Acquisition Programs (MDAPs) and Major Automated Information System (MAIS) programs.

(1) DoD Components will submit the SEPs to the DASD(SE) at least 45 calendar days before the scheduled Defense Acquisition Board milestone review.

(2) For Milestone B, the DoD Component-approved draft SEP will be provided to the DASD(SE) 45 calendar days prior to the Development RFP Release Decision Point. If continuing engineering activities such as the Preliminary Design Review create the need for

substantive changes to the SEP, it will be revised and resubmitted for approval prior to Milestone B. Program managers will update the SEP as needed after contract award to reflect any changes due to the contractor's technical approach and details not available prior to contract award. The updated SEP will be provided to the DASD(SE).

(3) Information systems may, with prior concurrence of the appropriate SEP approval authority, employ portfolio, organizational, or enterprise level documents to satisfy their systems engineering planning requirements. This documentation must convey a coherent plan for technical management of the program.

(4) Defense business systems may include system engineering planning in applicable sections of the business case and program charter. The business case and program charter must convey a coherent plan for technical management of the program and the DASD(SE) will review and approve those systems engineering sections for MAIS programs.

3. DEVELOPMENT PLANNING. The decisions to enter into the acquisition process, to mature technologies, and to begin system design must be based on early systems engineering analysis and assessments and a strong technical foundation.

a. In preparation for the Materiel Development Decision, and to inform an Analysis of Alternatives (AoA), the Components will conduct early systems engineering analyses and conduct an assessment of how the proposed candidate materiel solution approaches are technically feasible and have the potential to effectively address capability gaps, desired operational attributes, and associated external dependencies.

b. During the Materiel Solution Analysis Phase, the Components will conduct early systems engineering analyses, informed by and in support of the AoA, to support selection of a preferred materiel solution and development of the draft Capability Development Document (or equivalent requirements document).

c. In preparation for Milestone A, and to provide the technical basis for executing the Technology Maturation and Risk Reduction Phase, the Program Manager will conduct an early systems engineering assessment of technical risks and develop the technical approach for acquiring the product. This technical assessment will include software, integration, manufacturing, and reliability risks. The results will be incorporated in the SEP for Milestone A.

#### 4. SYSTEMS ENGINEERING TRADE-OFF ANALYSES

a. During the acquisition life cycle, the Program Manager will conduct systems engineering trade-off analyses to assess system affordability and technical feasibility to support requirements, investment, and acquisition decisions. Systems engineering trade-off analyses will depict the relationships between system life-cycle cost and the system's performance requirements, design parameters, and delivery schedules. The analysis results should be reassessed over the life cycle as system requirements, design, manufacturing, test, and logistics activities evolve and mature.

b. In support of the validation of the Capability Development Document (or equivalent requirements document), the Program Manager will conduct a systems engineering trade-off analysis showing how cost varies as a function of system requirements (including Key Performance Parameters), major design parameters, and schedule. The results will be provided to the MDA and will identify major affordability drivers and show how the program meets affordability constraints.

5. TECHNICAL RISK AND OPPORTUNITY MANAGEMENT. Technical risk management should address risk identification, analysis, mitigation planning, mitigation implementation, and tracking. Technical risks should be quantified and implications reflected in the program's Integrated Master Schedule and Integrated Master Plan. The Program Manager should also work with the applicable science and technology communities and Component acquisition leadership to influence technology investment planning. The goal is to both mitigate risks and create opportunities for technology development outcomes that could have a positive impact on meeting performance objectives as well as thresholds. Program risks, and opportunities as applicable, will be assessed at technical reviews and will include specific cost and schedule implications.

6. TECHNICAL PERFORMANCE MEASURES AND METRICS. The Program Manager will use technical performance measures and metrics to assess program progress. Analysis of technical performance measures and metrics, in terms of progress against established plans, will provide insight into the technical progress and risk of a program.

7. TECHNICAL REVIEWS. The Program Manager will conduct technical reviews (Preliminary Design Review (PDR) and Critical Design Review (CDR) for example) of program progress for systems in development as a basis for transitioning between phases within the development plan of work. Reviews will be event-driven and based on the review entrance criteria as documented in the SEP.

8. CONFIGURATION MANAGEMENT. The Program Manager will use a configuration management approach to establish and control product attributes and the technical baseline across the total system life cycle. This approach will identify, document, audit, and control the functional and physical characteristics of the system design; track any changes; provide an audit trail of program design decisions and design modifications; be integrated with the SEP and technical planning; and be consistent with the Intellectual Property Strategy. At completion of the system level Critical Design Review, the Program Manager will assume control of the initial product baseline, to the extent that the competitive environment permits.

9. MODELING AND SIMULATION. The Program Manager will integrate modeling and simulation activities into program planning and engineering efforts. These activities will support

consistent analyses and decisions throughout the program's life cycle. Models, data, and artifacts will be integrated, managed, and controlled to ensure that the products maintain consistency with the system and external program dependencies, provide a comprehensive view of the program, and increase efficiency and confidence throughout the program's life cycle.

10. MANUFACTURING AND PRODUCIBILITY. The Program Manager will ensure manufacturing and producibility risks are identified and managed throughout the program's life cycle. Beginning in the Materiel Solution Analysis Phase, manufacturing readiness and risk will be assessed and documented in the SEP. By the end of the Technology Maturation and Risk Reduction Phase, manufacturing processes will be assessed and demonstrated to the extent needed to verify that risk has been reduced to an acceptable level. During the Engineering and Manufacturing Development Phase, program managers will assess the maturity of critical manufacturing processes to ensure they are affordable and executable. Prior to a production decision, the Program Manager will ensure manufacturing and producibility risks are acceptable, supplier qualifications are completed, and any applicable manufacturing processes are or will be under statistical process control.

11. SOFTWARE. The development and sustainment of software can be a major portion of the total system life-cycle cost and should be considered at every decision point in the acquisition life cycle. A phased software development approach using testable software builds and/or fieldable software increments enables the developers to deliver capability in a series of manageable, intermediate products to gain user acceptance and feedback for the next build or increment, and reduce the overall level of risk. The SEP should address the following: software unique risks; inclusion of software in technical reviews; identification, tracking, and reporting of metrics for software technical performance, process, progress, and quality; software safety and security considerations; and software development resources. Software assurance vulnerabilities and risk based remediation strategies will be assessed, planned for, and included in the Program Protection Plan (PPP).

#### 12. RELIABILITY AND MAINTAINABILITY (R&M)

a. The Program Manager will formulate a comprehensive R&M program using an appropriate strategy to ensure reliability and maintainability requirements are achieved. The program will consist of engineering activities including for example: R&M allocations, block diagrams and predictions; failure definitions and scoring criteria; failure mode, effects and criticality analysis; maintainability and built-in test demonstrations; reliability testing at the system and subsystem level; and a failure reporting, analysis, and corrective action system maintained through design, development, production, and sustainment. The R&M program is an integral part of the systems engineering process.

b. The Program Manager will prepare a preliminary Reliability, Availability, Maintainability and Cost Rationale (RAM-C) Report in support of the Milestone A decision. This report provides a quantitative basis for reliability requirements, and improves cost estimates

and program planning. The report will be attached to the SEP at Milestone A, and updated in support of the Development RFP Release Decision Point, Milestone B, and Milestone C.

c. Reliability growth curves will reflect the reliability growth strategy and be employed to plan, illustrate, and report reliability growth. Reliability growth curves will be included in the SEP beginning at Milestone A, and updated in the Test and Evaluation Master Plan (TEMP) beginning at Milestone B. Reliability growth curves will be stated in a series of intermediate goals and tracked through fully integrated, system-level test and evaluation events at least until the reliability threshold is achieved. If a single curve is not adequate to describe overall system reliability, curves for critical subsystems should also be employed.

d. Program offices, developmental test agencies, and operational test agencies will assess the reliability growth required for the system to achieve its reliability threshold during testing, and report the results of those assessments to the acquisition chain of command including the MDA.

e. Reliability growth will be monitored and reported throughout the acquisition process. Program managers will report the status of R&M objectives and/or thresholds as part of the formal design review process, and during systems engineering technical reviews or other reviews. Reliability growth curves will be employed to report reliability growth status at Defense Acquisition Executive Summary reviews.

13. PROGRAM PROTECTION. Program Protection is the integrating process for managing risks to DoD warfighting capability from foreign intelligence collection; from hardware, software, and cyber vulnerability or supply chain exploitation; and from battlefield loss throughout the system life cycle. Where a DoD capability advantage derives from a DoD-unique technology, Program Protection manages and controls the risk that the enabling technology will be lost to an adversary. Where a DoD capability advantage derives from the integration of commercially available or custom-developed components, Program Protection manages the risk that design vulnerabilities or supply chains will be exploited to destroy, modify, or exfiltrate critical data, degrade system performance, or decrease confidence in a system. Program Protection also supports international partnership building and cooperative opportunities objectives by enabling the export of capabilities without compromising underlying U.S. technology advantages.

a. PPP. Program managers will employ system security engineering practices and prepare a PPP to guide their efforts and the actions of others to manage the risks to critical program information and mission-critical functions and components associated with the program. The PPP will be submitted for MDA approval at each Milestone review, beginning with Milestone A. For programs with the Defense Acquisition Executive as the MDA, PPPs will be submitted to the DASD(SE) not less than 45 calendar days prior to the relevant review. For Milestone B, the DoD Component-approved draft PPP will be provided to the DASD(SE) 45 days prior to the Development RFP Release Decision Point. Program managers should include the PPP in RFPs, and prepare updates to the PPP after any contract award to reflect the contractor's approved

technical approach and the details or necessary changes that were not available or appropriate prior to contract award.

b. Program managers will describe in their PPP the program's Critical Program Information and mission-critical functions and components; the threats to and vulnerabilities of these items; the plan to apply countermeasures to mitigate associated risks; and planning for exportability and potential foreign involvement. Countermeasures should include anti-tamper, exportability features, security (including cybersecurity, operations security, information security, personnel security, and physical security), secure system design, supply chain risk management, software assurance, anti-counterfeit practices, procurement strategies, and other mitigations in accordance with DoD Instruction 5200.39 (Reference (aq)) and DoD Instruction 5200.44 (Reference (ar)). Program managers will submit the program's Component CIO-approved Cybersecurity Strategy as part of every PPP. Countermeasures mitigate or remediate vulnerabilities throughout the product life cycle, including design, development, developmental and operational testing, operations, sustainment, and disposal. Program managers will incorporate automated software vulnerability analysis tools throughout the life cycle and ensure remediation of software vulnerabilities is addressed in PPPs, test plans, and contract requirements (as required by section 933 of P.L. 112-239, Reference (y)).

14. OPEN SYSTEMS ARCHITECTURES. Program managers are responsible for applying open systems approaches in product designs where feasible and cost-effective. Open systems and open architectures provide valuable mechanisms for continuing competition and incremental upgrades. Program management will use open systems architecture design principles to support an open business model (see paragraph 7.d in Enclosure 2). To the maximum extent practicable, each program will leverage the guidance and procedures in the "DoD Open Systems Architecture Contract Guidebook for Program Managers," Reference (bj).

15. CORROSION PREVENTION AND CONTROL. The Program Manager will identify and evaluate corrosion considerations throughout the acquisition and sustainment phases that reduce, control, or mitigate corrosion in sustainment. The Program Manager will perform corrosion prevention and control planning and include corrosion control management and design considerations for corrosion prevention and control in the SEP and Life Cycle Sustainment Plan. The Program Manager will ensure that corrosion control requirements are included in the design and verified as part of test and acceptance programs. Planning for corrosion control will be reviewed by the MDA at each major decision point as appropriate.

16. ENVIRONMENT, SAFETY, AND OCCUPATIONAL HEALTH (ESOH). The Program Manager will integrate ESOH risk management into the overall systems engineering process for all engineering activities throughout the system's life cycle. As part of risk reduction, the Program Manager will eliminate ESOH hazards where possible, and manage ESOH risks where hazards cannot be eliminated. The Program Manager will use the methodology in MIL-STD-882E, "DoD Standard Practice for System Safety" (Reference (bk)). Program Managers will assess the status of ESOH risks and acceptance decisions at technical reviews. Acquisition

program reviews and fielding decisions will address the status of all high and serious risks. Prior to exposing people, equipment, or the environment to known system-related ESOH hazards, the Program Manager will document that the associated risks have been accepted by the following acceptance authorities: the Component Acquisition Executive for high risks, Program Executive Officer-level for serious risks, and the Program Manager for medium and low risks. The user representative, as defined in MIL-STD-882E, must be part of this process throughout the life cycle and will provide formal concurrence prior to all serious- and high-risk acceptance decisions. For Joint Programs, the ESOH risk acceptance authorities reside within the Lead DoD Component. Program managers will document the ESOH planning in the SEP and will document the results of the planning implementation in the Programmatic ESOH Evaluation (PESHE) and the National Environmental Policy Act (NEPA) (Reference (ao)) and Executive Order (E.O.) 12114 (Reference (ap)) (NEPA/E.O. 12114) Compliance Schedule.

a. Programmatic ESOH Evaluation (PESHE). The Program Manager, regardless of acquisition category (ACAT) level, will prepare and maintain a PESHE to document data generated by ESOH analyses conducted in support of program execution. The PESHE will include at a minimum identification of ESOH risks and their status; and, identification of hazardous materials, wastes, and pollutants (discharges/emissions/noise) associated with the system and its support as well as the plans for minimization and/or safe disposal.

b. NEPA/ E.O. 12114. The Program Manager will prepare and maintain a NEPA/E.O. 12114 Compliance Schedule that covers all known or projected system-related activities that may trigger compliance requirements including testing, fielding, and support of the system. The Compliance Schedule will incorporate the test schedules and locations identified in the TEMP to enable consideration of potential impacts to the environment and completion of appropriate documentation in accordance with Component implementing procedures. The Program Manager will conduct and document the NEPA/E.O. 12114 analyses for which the Program Manager is the action proponent, and provide system-specific analyses and data to support other organizations' NEPA and E.O. 12114 analyses (References (ao) and (ap)) of system-related activities for which the Program Manager is not the proponent. The Component Acquisition Executive (or for joint programs, the Component Acquisition Executive of the lead DoD Component) or designee, is the approval authority for system-related NEPA and E.O. 12114 documentation for which the Program Manager is the proponent.

c. Mishap Investigation Support. The Program Manager will support system-related Class A and B mishap investigations by providing analyses of hazards that contributed to the mishap and recommendations for materiel risk mitigation measures, especially those that minimize human errors (as required by 10 U.S.C. 2255 (Reference (n))).

17. INSENSITIVE MUNITIONS. For all systems containing energetics, the Program Manager will comply with Insensitive Munitions requirements in accordance with DoD and Component policy requirements (as required by 10 U.S.C. 2389 (Reference (n))).

18. ITEM UNIQUE IDENTIFICATION. The Program Manager will plan for and implement item unique identification to identify and track applicable major end items, configuration-controlled items, and government-furnished property to enhance life-cycle management of assets in systems acquisition and sustainment, and to provide more accurate asset valuation and property accountability. Item unique identification planning and implementation will be documented in an Item Unique Identification Implementation Plan linked to the program's SEP (DoD Instruction 8320.04, Reference (am)).

19. SPECTRUM SUPPORTABILITY. Program managers are responsible for ensuring compliance of their programs with U.S. and host nation electromagnetic spectrum regulations (47 U.S.C. 305 and 901 through 904 (Reference (af)) and section 104 of P.L.102-538 (Reference (ae))). Program managers will also submit written determinations to the Component Chief Information Officer (CIO) or equivalent that the electromagnetic spectrum necessary to support the operation of the system during its expected life cycle is or will be available in accordance with DoD Instruction 4650.01 (Reference (au)). These determinations will be the basis for recommendations provided to the MDA by the Component CIO or equivalent.

20. DESIGN REVIEWS. Program Managers will plan for and conduct design reviews as needed to manage program planning and execution. Design review planning will be included in the SEP. Any program that is not initiated at Milestone C will include the following design reviews:

a. PDR. The PDR assesses the maturity of the preliminary design supported by the results of requirements trades, prototyping, and critical technology demonstrations. The PDR will establish the allocated baseline and confirm that the system under review is ready to proceed into detailed design (development of build-to drawings, software code-to documentation, and other fabrication documentation) with acceptable risk. For MDAPs and MAIS programs, a post-PDR assessment will be conducted and provided to the MDA. For ACAT ID and ACAT IAM programs, DASD(SE) will participate in the program's PDRs as the basis for preparation of a post-PDR assessment to inform the MDA of technical risks and the program's readiness to proceed into detailed design. For ACAT IC and ACAT IAC programs, the Component Acquisition Executive will conduct the post-PDR assessment.

b. CDR. The CDR assesses design maturity, design build-to or code-to documentation, and remaining risks and establishes the initial product baseline. It will be used as the decision point that the system design is ready to begin developmental prototype hardware fabrication and/or software coding with acceptable risk. For MDAPs and MAIS programs, a CDR assessment will be conducted, assessing the conduct of the review and the technical risk and will be provided to the MDA. For ACAT ID and IAM programs, DASD(SE) will conduct the CDR assessment. For ACAT IC and IAC programs, the Component Acquisition Executive will conduct the CDR assessment. This will be accomplished through DASD(SE) participation in the CDR and review of any program artifacts necessary to conduct the assessment.

21. PROGRAM SUPPORT ASSESSMENTS (PSAs). The Office of the DASD(SE) will conduct independent, cross-functional PSAs of programs' technical management and systems engineering progress and plans, with support from other DoD organizations. PSAs are for the purpose of assisting program managers' technical planning, and to improve execution by sharing best practices and lesson's learned from other programs. Risk identification and risk mitigation assistance will be one focus of the PSAs. These reviews may also support acquisition milestones, decision reviews, or be conducted in response to technical issues on ACAT ID and IAM programs. These assessments are intended to help program managers shape their programs' technical planning and improve execution by providing actionable recommendations and identifying engineering and integration risks, as well as potential mitigation activities. The DoD Components will provide access to all program records and data including technical review artifacts and classified, unclassified, competition sensitive, and proprietary information that the DASD(SE) considers necessary to carry out these assessment in accordance with 10 U.S.C. 139 (Reference (n)).

ENCLOSURE 4

DEVELOPMENTAL TEST AND EVALUATION (DT&E)

1. PURPOSE. This enclosure provides policy and procedures for developmental test and evaluation of defense acquisition programs.

2. OVERVIEW

a. Program managers use DT&E activities to manage and mitigate risks during development, to inform decision makers throughout the program life cycle, and to verify that products are compliant with contractual and operational requirements. DT&E provides program engineers and decision-makers with knowledge to measure progress, identify problems, and to characterize system capabilities and limitations, and manage technical and programmatic risks. DT&E results are also used as exit criteria to ensure adequate progress prior to investment commitments or initiation of phases of the program, and as the basis for contract incentives.

b. DT&E starts with capability requirements and continues through product development, delivery, and acceptance; transition to operational test and evaluation (OT&E); production; and operations and support. DT&E involvement in the requirements and systems engineering processes ensures that capability requirements are measurable, testable, and achievable. Identifying and correcting deficiencies early is less costly than discovering system deficiencies late in the acquisition process.

c. The Program Manager will use a Test and Evaluation (T&E) Master Plan (TEMP) as the primary planning and management tool for the integrated test program. Whenever feasible, testing will be conducted in an integrated fashion to permit all stakeholders to use data in support of their respective functions. Integrated Testing is defined as the collaborative planning and collaborative execution of test phases and events, to provide shared data in support of independent analysis, evaluation, and reporting by all stakeholders, particularly the system engineering, developmental (both contractor and government) and operational T&E communities. The Program Manager will establish an integrated test planning group consisting of empowered representatives of test data producers and consumers (to include all applicable stakeholders) to ensure collaboration and to develop a strategy for robust, efficient testing to support systems engineering, evaluations, and certifications throughout the acquisition life cycle.

d. The Program Manager will identify the test resources needed to execute the T&E program to acquire the data that will be used to understand program progress, identify issues, verify compliance, and balance cost and performance. Test resource requirements will be included in the TEMP.

e. The Deputy Assistant Secretary of Defense for Developmental Test and Evaluation (DASD(DT&E)) will monitor the activities of Major Defense Acquisition Programs (MDAPs), Major Automated Information System (MAIS) programs, and Under Secretary of Defense for

Acquisition, Technology and Logistics-designated special interest programs as well as approve or disapprove the DT&E plans in the TEMP. For all other programs, the Component Acquisition Executive will designate, as desired, the DT&E organization that monitors DT&E activities and approves or disapproves the DT&E plans in the TEMP. DASD(DT&E) authorities, responsibilities, and functions are described in DoD Instruction 5134.17 (Reference (bl)).

### 3. T&E MANAGEMENT

a. Program managers for MDAPs and MAIS programs will designate a Chief Developmental Tester in accordance with 10 U.S.C. 139b and 1706 (Reference (n)). The Chief Developmental Tester will be responsible for coordinating the planning, management, and oversight of all DT&E activities; maintaining insight into contractor activities; overseeing the T&E activities of other participating government activities; and helping the Program Manager make technically informed, objective judgments about contractor and government T&E planning and results. The Chief Developmental tester will chair the integrated test planning group.

b. Program managers for MDAPs will designate a government test agency to serve as the lead DT&E organization in accordance with 10 U.S.C. 139b (Reference (n)). The lead DT&E organization will be responsible for providing technical expertise on T&E issues to the Chief Developmental Tester; conducting DT&E activities as directed by the Chief Developmental Tester or his or her designee; supporting certification and accreditation activities when feasible; assisting the Chief Developmental Tester in providing oversight of contractors; and assisting the Chief Developmental Tester in reaching technically informed, objective judgments about contractor and government T&E planning and results. For all other programs, a lead DT&E Organization should be used, when feasible, and identified in the TEMP.

c. The designation of a Chief Developmental Tester and Lead DT&E Organization will be made as soon as practicable after the program office is established, and will be maintained until all DT&E is concluded.

d. The Program Manager will use the TEMP as the primary planning and management tool for all test activities starting at Milestone A. The Program Manager will prepare and update the TEMP as needed and to support acquisition milestones or decision points. For the Full Rate Production Decision Review or the Full Deployment Decision and thereafter, the MDA may require TEMP updates or addendums to plan for additional testing. Section 5 in Enclosure 5 has additional policy for the TEMP in the context of operational testing.

e. The Program Manager will take full advantage of DoD ranges, labs, and other resources. Systems have become more complex and resource constraints often force tradeoffs in the type and scope of testing that can be performed. The DT&E budget and schedule must allow testing that adequately verifies performance to contractual requirements in a controlled environment and to operational requirements.

### 4. DT&E ACTIVITIES

a. DT&E activities will start when requirements are being developed to ensure that key technical requirements are measurable, testable, and achievable.

b. A robust DT&E program includes a number of key activities to provide the data and assessments for decision making. The DT&E program will:

(1) Verify achievement of critical technical parameters and the ability to achieve key performance parameters, and assess progress toward achievement of critical operational issues.

(2) Assess the system's ability to achieve the thresholds prescribed in the capabilities documents.

(3) Provide data to the Program Manager to enable root cause determination and to identify corrective actions.

(4) Validate system functionality.

(5) Provide information for cost, performance, and schedule tradeoffs.

(6) Assess system specification compliance.

(7) Report on program progress to plan for reliability growth and to assess reliability and maintainability performance for use during key reviews.

(8) Identify system capabilities, limitations, and deficiencies.

(9) Assess system safety.

(10) Assess compatibility with legacy systems.

(11) Stress the system within the intended operationally relevant mission environment.

(12) Support cybersecurity assessments and authorization.

(13) Support the interoperability certification process.

(14) Document achievement of contractual technical performance, and verify incremental improvements and system corrective actions.

(15) Assess entry criteria for Initial Operational Test and Evaluation (IOT&E) and Follow-On Operational Test and Evaluation.

(16) Provide DT&E data to validate parameters in models and simulations.

(17) Assess the maturity of the chosen integrated technologies.

## 5. DT&E PLANNING CONSIDERATIONS

a. The Program Manager will:

(1) Use the TEMP as the primary test planning and management document.

(2) Use the TEMP format and content in the Defense Acquisition Guidebook (Reference (1)) as guidance in formulating DT&E plans. The TEMP will:

(a) Contain an integrated test program summary and master schedule of all major test events or test phases.

(b) Include an event-driven testing schedule that will allow adequate time to support pre-test predictions; testing; post-test analysis, evaluation, and reporting; reconciliation of predictive models; and adequate time to support execution of corrective actions in response to discovered deficiencies. The schedule should allow sufficient time between DT&E and IOT&E for rework, reports, and analysis and developmental testing of critical design changes.

(c) Be a source document when developing the request for proposals.

(d) Guide how contractor proposals will address program test needs such as: test articles; T&E data rights; government access to the Failure Reporting, Analysis and Corrective Action System and other test outcome repositories; built-in test and embedded instrumentation data (including software log files); contractor verification requirements; government use of contractor-conducted T&E; government review and approval of contractor T&E plans; government witness of contractor test events; and government review of contractor evaluations. (See section 5 in Enclosure 5 for additional details.)

(e) Include identification of all contractor and government system level reliability testing needed to support initial reliability planning estimates. The Program Manager will include the reliability evaluation methodology for reliability critical items. The military departments/program managers will collect and retain data from the T&E of the reliability and maintainability of major weapon systems to inform system design decisions, provide insight into sustainment costs, and inform estimates of operating and support costs for such systems.

(f) Starting at Milestone B, include one or more reliability growth curves (RGCs).

1. If a single curve is not adequate to describe the overall system reliability, curves for critical subsystems with rationale for their selection, will be provided.

2. For software (in any system), the TEMP will include projected and observed software maturity metrics. For hardware acquisitions, Milestone B Reliability Growth Curves will consist of observed (when available) and projected reliability.

3. RGCs will be stated in a series of intermediate goals tracked through fully integrated, system-level T&E events until the reliability threshold is achieved.

(3) Use scientific test and analysis techniques to design an effective and efficient test program that will produce the required data to characterize system behavior across an appropriately selected set of factors and conditions.

(4) Identify each developmental test phase or major developmental test event as a contractor or government DT&E. All programs will plan for the conduct of DT&E and/or integrated testing to provide confidence in the system design solution. Each major developmental test phase or event (including Test Readiness Reviews) will have test entrance and exit criteria. The developmental test completion criteria (customer needs) will dictate what data are required from the test event.

(5) Ensure that all test infrastructure and/or tools (e.g., models, simulations, automated tools, synthetic environments) to support acquisition decisions will be verified, validated, and accredited (VV&A) by the intended user or appropriate agency. Test infrastructure, tools, and/or the VV&A strategy including the VV&A authority for each tool or test infrastructure asset will be documented in the TEMP. Program Managers will plan for the application and accreditation of any modeling and simulation tools supporting DT&E.

(6) Develop complete resource estimates for T&E to include: test articles, test sites and instrumentation, test support equipment, threat representations and simulations, test targets and expendables, support for operational forces used in test (both friendly and threat), models and simulations, testbeds, joint mission environment, distributed test networks, funding, manpower and personnel, training, federal/state/local requirements, range requirements, and any special requirements (e.g., explosive ordnance disposal requirements or corrosion prevention and control). Resources will reflect the best estimate for conducting all test activities. Resources will be mapped against the evaluation framework and schedule to ensure adequacy and availability.

(7) Ensure that resource estimates identified in the TEMP are matched against the schedule and justified by analysis.

(8) Resource and ensure threat-appropriate Red Team/Penetration testing to emulate the threat of hostile penetration of program information systems in the operational environment. Additional guidance on red team operations is included in Chairman of the Joint Chiefs of Staff Instruction 6510.01F (Reference (bm)).

(9) Develop a strategy and budget resources for cybersecurity testing. The test program will include, as much as possible, activities to test and evaluate a system in a mission environment with a representative cyber-threat capability (additional guidance is included in the Defense Acquisition Guidebook, Reference (l)).

(10) Ensure that each major developmental test phase or event in the planned test program has a well-defined description of the event, specific objectives, scope, appropriate use of modeling and simulation, and an evaluation methodology.

(11) Describe an evaluation methodology in the TEMP starting at Milestone A that will provide essential information on programmatic and technical risks as well as information for major programmatic decisions. Starting at Milestone B, the evaluation methodology will include an evaluation framework to identify key data that will contribute to assessing progress toward achieving: key performance parameters, critical technical parameters, key system attributes, interoperability requirements, cybersecurity requirements, reliability growth, maintainability attributes, developmental test objectives, and others as needed. In addition, the evaluation framework will show the correlation/mapping between test events, key resources, and the decision supported. The evaluation methodology will support a Milestone B assessment of planning, schedule, and resources and a Milestone C assessment of performance, reliability, interoperability, and cybersecurity.

(12) Develop a software test automation strategy to include when key test automation software components or services will be acquired and how those decisions will be made.

b. Programs will use government T&E capabilities unless an exception can be justified as cost-effective to the government. Program managers will conduct a cost-benefit analysis for exceptions to this policy and obtain approval through the TEMP approval process before acquiring or using non-government, program unique test facilities or resources.

c. In accordance with DoD Instruction 8500.2 (Reference (bn)), all programs must have security controls implemented consistent with their system classification. Program managers will ensure appropriate testing to evaluate capability to protect information and information systems from unauthorized access, use, disclosure, disruption, modification, or destruction. The Defense Intelligence Agency, in coordination with the Program Manager, will determine the generation of the relevant operational threat environment based on the System Threat Assessment Report, the Multi-Service Force Deployment, the Joint Country Forces Assessment and scenario support products (DoD Instruction 5000.61 (Reference (bo))).

d. Systems that operate as part of a System of Systems may require deployment of additional test assets to evaluate end-to-end capabilities. Program managers will ensure that adequate testing of total system of systems performance is conducted as part of the DT&E program.

e. For accelerated acquisition and urgent programs, the levels of developmental testing required will be highly tailored to emphasize schedule over other considerations. Required testing to verify safety, capabilities, and limitations will be performed consistent with the urgency of fielding the capability. Responsibility for determining developmental testing requirements will be delegated to the lowest practical level. Urgent programs will generally not be on an OSD DT&E Engagement list. If an Accelerated Acquisition program is on the DT&E Engagement list, complete developmental testing may be deferred so as not to impede early fielding, however an Operational Assessment will typically be conducted (see paragraph 6.a in

Enclosure 5). Enclosure 13 provides policy for acquisition programs that respond to urgent needs.

## 6. DT&E EXECUTION, EVALUATION, AND REPORTING

a. DT&E Execution. As the Program Manager executes the program's strategy for the DT&E, the Program Manager and test team will develop detailed test plans for each developmental test event identified in the TEMP. Test plans must consider the potential impacts on the environment in accordance with 10 U.S.C. 4321-4347 (Reference (ao)) and Executive Order 12114 (Reference (ap)), and on personnel. The Program Manager, in concert with the user and T&E community, will provide safety releases (to include National Environmental Policy Act documentation, safety, and occupational health risk acceptance in accordance with section 16 in Enclosure 3 of this instruction) to testers prior to any test that may impact safety of personnel. A Test Readiness Review will be conducted for those events identified in the TEMP.

b. DT Evaluation. For MDAPs, MAIS programs, and USD(AT&L)-designated special interest programs, the DT&E TEMP approval authority will provide the MDA with an assessment at each milestone review or decision point. The assessment will be based on the DT&E to date, and will address the adequacy of the program planning, the implications of developmental testing results to date, and the risks to successfully meeting the goals of the remaining DT&E events in the program.

### c. DT&E Reports and Data

(1) The acquisition chain of command, including the Program Manager, and the DASD(T&E) and their designated representatives will have full and prompt access to all ongoing developmental testing, and all developmental test records and reports, including but not limited to: data from all tests, system logs, execution logs, test director notes, certifications, and user/operator assessments and surveys. This applies to all government accessible data including: classified, unclassified, and competition sensitive or proprietary data. Data may be preliminary and will be identified as such.

(2) The Program Manager and test agencies for all programs will provide the Defense Technical Information Center (DTIC) with all reports and the supporting data for the test events in those reports. Paragraphs 10.c.(5) through 10.c.(7) in Enclosure 5 of this instruction include a more detailed discussion.

(3) The DoD Components will collect and retain data from developmental test and evaluation, integrated testing, and operational test and evaluation on the reliability and maintainability of Acquisition Category I and II programs.

(4) Tables 5 and 6 in Enclosure 1 identify reporting and notification requirements associated with the conduct of DT&E. The conditions for the reporting/notification will be when a Lead DT&E Organization conducts any DT&E activities for the program.

ENCLOSURE 5

OPERATIONAL AND LIVE FIRE TEST AND EVALUATION

1. OVERVIEW

a. The fundamental purpose of test and evaluation (T&E) is to enable the DoD to acquire systems that work. To that end, T&E provides engineers and decision-makers with knowledge to assist in managing risks, to measure technical progress, and to characterize operational effectiveness, suitability, and survivability. This is done by planning and executing a robust and rigorous T&E program.

b. The Program Manager is responsible for resourcing and executing the system's approved T&E program. The Program Manager assembles a test team of empowered representatives of the various test data consumers. The team starts early (i.e., pre-Milestone A) to develop a robust, rigorous, and efficient test program that will be conducted in support of systems engineering, evaluations, and certifications throughout the program life cycle. The Program Manager documents the test program planning in the Test and Evaluation Master Plan (TEMP). The operational and select live fire test events in the TEMP must have approved test plans. Test plans are written by the test organization responsible for the test. The DoD Component and the Director of Operational Test and Evaluation (DOT&E) approve TEMPs, operational test plans (OTPs), and select live fire test plans (LFTPs).

c. For programs under DOT&E Operational Test and Evaluation (OT&E) or Live-Fire Test and Evaluation (LFT&E) oversight, the DOT&E will provide the Milestone Decision Authority (MDA) with milestone assessments. DOT&E will submit a report to the Secretary of Defense and the congressional defense committees before programs under DOT&E OT&E or LFT&E oversight may proceed beyond Low-Rate Initial Production (LRIP) in accordance with 10 U.S.C. 2366 and 2399 (Reference (n)).

2. APPLICABILITY. This enclosure applies to all defense acquisition programs on OSD OT&E or LFT&E oversight. This enclosure is written to the Hardware Intensive Program model described in the core instruction, paragraph 5.c.(3)(b), with tailoring instructions for the software within those programs and the software-specific acquisition models. When there is no distinction between Defense Unique Software Intensive Programs and Incrementally Fielded Software Intensive Programs, they are referenced herein as "Software Acquisitions." Tailoring for any software, irrespective of acquisition model, is identified as being "for software in any system." Tailoring for Accelerated Acquisition models will be considered on a case-by-case basis.

3. DOT&E OVERSIGHT LIST

- a. DOT&E may place any program or system on the DOT&E Oversight List for OT&E or LFT&E oversight at any time.
- b. DOT&E maintains the DOT&E Oversight List continuously online at <https://extranet.dote.osd.mil/oversight/> (Common Access Card required).
- c. The DOT&E Oversight List is unclassified. Classified and sensitive programs that are placed on DOT&E oversight will be identified directly to their MDAs.
- d. Major Defense Acquisition Programs (MDAPs) on DOT&E oversight include those programs that meet the statutory definition of 10 U.S.C. 2430 (Reference (n)), and those that are designated by the DOT&E as MDAPs for the purposes of OT&E under the authority of paragraph (a)(2)(B) of 10 U.S.C. 139 (Reference (n)). The latter programs are not MDAPs for any other purpose.
- e. Unless specifically waived, the test-related documentation that is required for MDAP programs will be required for all programs on the DOT&E Oversight List, including submission of Defense Intelligence Agency or DoD Component-validated System Threat Assessment Reports, TEMPs, OTPs, LFTPs, and reporting of test results.
- f. Force protection equipment (including non-lethal weapons) will be subject to DOT&E oversight, as determined by DOT&E. The DOT&E will approve required LFTPs and/or live fire strategies for such systems.
- g. Increments of capability and other alterations that materially change system performance and alterations that pose substantial risk (if they fail) of degrading fielded military capabilities will be tested operationally. Product improvements or upgrades to system survivability will also be tested and evaluated.
- h. The DOT&E Oversight List will identify programs grouped for coordinated or synchronized testing.

#### 4. T&E PROGRAM MANAGEMENT

- a. Early Engagement. Program managers for programs on DOT&E oversight will designate a T&E Working Integrated Product Team (also known as an Integrated Test Team), as soon as practicable after the Materiel Development Decision. The T&E Working Integrated Product Team develops and tracks the T&E program in all phases. The T&E Working Integrated Product Team will include empowered representatives of test data stakeholders such as Systems Engineering, Developmental Test and Evaluation (DT&E), OT&E, LFT&E, the user, Product Support, the intelligence community, and applicable certification authorities.
- b. Lead Operational Test Agency (OTA). The lead OTA is the responsible OTA for a program. When more than one OTA is responsible for a program, the responsible OTAs will jointly identify the lead OTA.

c. Required Documentation. T&E program documentation that already exists in other acquisition documents may be provided by working links. Documentation that directly impacts the OT&E or LFT&E program will be included or linked in the applicable T&E documentation or else the documentation in question will be approved by DOT&E in addition to any other applicable approvals. DOT&E approval or disapproval of a document incorporating links constitutes approval or disapproval of the content applicable to operational testing in all of the links. Specifically, although DOT&E does not approve all the content of linked documents, DOT&E may require changes to linked content dealing specifically with operational or live-fire testing.

## 5. T&E PROGRAM PLANNING

a. The TEMP is a signed contract among DOT&E, the MDA, senior DoD Component leadership, the lead OTA, and the Program Manager.

b. The Program Manager and T&E Working Integrated Product Team will prepare and then update the TEMP to support the acquisition milestones. For the Full Rate Production Decision Review or the Full Deployment Decision and thereafter (for DOT&E OT&E or LFT&E Oversight programs), DOT&E, the MDA, or the senior DoD Component leadership may require TEMP updates or addendums to address additional testing.

c. Working through the T&E Working Integrated Product Team, program managers for DOT&E oversight programs will make draft TEMPs available to program stakeholders as early and as frequently as possible. DoD Component-approved TEMPs will be submitted to OSD for approval not later than 45 calendar days prior to the milestone decision.

(1) A TEMP may be waived for select Accelerated Acquisitions. In cases when DOT&E decides a TEMP is not needed, early briefings to DOT&E (in lieu of the TEMP) are recommended to facilitate subsequent DOT&E approval of the OTPs and LFTPs. DOT&E will approve the OTPs and LFTPs for accelerated acquisition (including capabilities acquired in response to an urgent need and acquisitions granted Rapid Acquisition Authority) if those acquisitions are on DOT&E OT&E or LFT&E oversight. If DOT&E has placed an Accelerated Acquisition on oversight, it is because DOT&E has determined that OT&E or LFT&E is required before fielding. Testing to verify safety, survivability, and operational performance will be conducted consistent with the urgency of deploying the capability. The Secretary of Defense may authorize the Rapid Acquisition Official to defer some testing until after fielding if he or she determines that the testing would unnecessarily impede the deployment of the needed capability. Testing should normally include user feedback to support design and operational use improvements.

(2) Initial Operational Test and Evaluation (IOT&E) is required for all programs on DOT&E oversight according to 10 U.S.C. 2399 (Reference (n)). The lead OTA will conduct an independent, dedicated phase of IOT&E before full-rate production or full deployment that provides objective test results free from potential conflicts of interest or bias. The primary

purpose of IOT&E is to determine a system's operational effectiveness and operational suitability. IOT&E can also be used to support system certification requirements and training requirements as long as the primary purpose is accomplished.

d. The T&E Working Integrated Product Team will conduct coordinated planning for IOT&E as early as possible so that developing activities will be aware of expectations at IOT&E:

(1) The lead OTA for the program will provide the DOT&E with a memorandum assessing the T&E implications of the initial concept of operations provided by the user as soon as practical after the Materiel Development Decision.

(2) Beginning at Milestone A, every TEMP will include an annex containing the Component's rationale for the requirements in the draft Capability Development Document (CDD) or equivalent requirements document.

(3) For software acquisitions, the lead OTA will conduct an analysis of operational risk to mission accomplishment covering all planned capabilities or features in the system (see paragraph 7.d in this enclosure for additional details). The analysis will include commercial and non-developmental items. The initial analysis will be documented in the Milestone A TEMP and updated thereafter.

(4) The TEMP will include evaluation of mission-level interoperability across key interfaces. Systems that provide capabilities for joint missions will be tested in the expected joint mission environment.

e. Documenting the Planned Evaluation

(1) Starting at Milestone A, the TEMP should document T&E for phase completion (major test events required for milestone exit and entrance criteria). In addition, each major test phase or event should have test entrance and test completion criteria.

(2) Each major test phase or event should have a synopsis of the intended analysis. A synopsis should indicate how the required data for test completion will contribute to one or more standard measures of program progress as defined in the Defense Acquisition Guidebook (Reference (1)):

(a) Critical operational issues (also known as critical operational issues and criteria).

(b) Key performance parameters.

(c) Critical technical parameters.

(d) Key system attributes.

(3) Every TEMP will include a table of independent variables (or "conditions," "parameters," "factors," etc.) that may have a significant effect on operational performance.

Starting at Milestone B, the updated table of variables will include the anticipated effects on operational performance, the range of applicable values (or “levels,” “settings,” etc.), the overall priority of understanding the effects of the variable, and the intended method of controlling the variable during test (uncontrolled variation, hold constant, or controlled systematic test design).

(4) Starting at Milestone B, every TEMP will include an evaluation overview. The overview will show how the major test events and test phases link together to form a systematic, rigorous, and structured approach to evaluating system performance across the applicable values of the independent variables. Test resources will be derived from the evaluation overview (see section 10.c in this enclosure).

## 6. OT&E ACTIVITIES

### a. Operational Assessments (OAs)

(1) The lead OTA will prepare and report results of one or more early OAs (EOAs) as appropriate in support of one or more of the design phase life-cycle events (namely, the CDD Validation, the Development Request for Proposal (RFP) Decision Point, or Milestone B). An EOA is typically an analysis, conducted in accordance with an approved test plan, of the program’s progress in identifying operational design constraints, developing system capabilities, and mitigating program risks. For programs that enter development at Milestone B, the lead OTA will (as appropriate) prepare and report EOA results after program initiation and prior to the Critical Design Review.

(2) An OA is a test event that is conducted before initial production units are available and which incorporates substantial operational realism. An OA is conducted by the lead OTA in accordance with a test plan approved by DOT&E for programs that are on OSD OT&E oversight. As a general criterion for proceeding through Milestone C, the lead OTA will conduct and report results of at least one OA. An OA is usually required in support of the first limited fielding for acquisition models employing limited fieldings. An operational test, usually an OA, is required prior to deployment of Accelerated Acquisition programs that are on OSD OT&E or LFT&E oversight. An OA may be combined with training events (see paragraph 10.a.(9) in this enclosure). An OA is not required for programs that enter the acquisition system at Milestone C.

b. RFPs. An up-to-date TEMP will be provided prior to release of RFPs for Milestone B and Milestone C. To the maximum extent feasible, RFPs should be consistent with the operational test program documented in the TEMP.

### c. OT&E for Reliability and Maintainability

(1) The TEMP will include a plan (typically via working link to the Systems Engineering Plan) to allocate top-level reliability requirements down to the components and sub-components. Reliability allocations will include hardware and software, and will include commercial and non-development items.

(2) Reliability Growth

(a) Beginning at Milestone B, the TEMP will include T&E for reliability growth and reliability growth curves for the whole system and the reliability critical systems, sub-systems, components, and sub-components. Reliability-critical items require test to mitigate risk resulting from the use of new technologies or from challenging operating environments. T&E for reliability growth will provide data on initial reliability (namely: identify the contractor and government reliability testing needed to achieve initial reliability) and reliability test events. Reliability growth curves will display planned initial reliability, the allocated reliability requirement, a curve showing reliability that is expected during each reliability test event, and points marking reliability test results to date.

(b) For software (in any system) reliability growth will be measured by software maturity metrics (for example, counts of high priority defects) at regular intervals.

(c) Beginning at Milestone B, the TEMP will include a working link to the Failure Modes, Effects and Criticality Analysis (FMECA) of identified or anticipated system failure modes, the impacted components and sub-components, and the method of failure mode discovery. A software defect/failure tracking database(s) may replace the FMECA in software acquisitions.

(3) Updated TEMPs at Milestone C will include updated reliability growth curves that reflect test results to date, any updates to the planned T&E for reliability growth, and a working link to the updated FMECA.

d. Use of Modeling and Simulation and Prototypes in Testing

(1) Every distinct use of a model or simulation in support of an operational evaluation will be accredited by an OTA.

(2) Prototypes will be instrumented when feasible.

(3) To the extent feasible, program managers should test prototype human interfaces with operational users.

(4) Program managers for software acquisitions should develop process models of the time and effort needed to perform critical tasks and functions. Such models support operational test design and analysis of results as well as managerial needs such as sustainment cost projections and analysis of impacts of process changes.

7. OT&E FOR SOFTWARE

a. As feasible, testing of software for any system should be supported by a model (or emulated hardware or virtual machine) of the digital device(s) on which the software runs.

b. Program managers for software acquisitions will provide plans at Milestone B indicating how system logs and system status records will interface with operational command and control. At IOT&E or a prior test event, program managers for software acquisitions will demonstrate performance monitoring of operational metrics to manage and operate each system capability (or the whole system, as appropriate).

c. For software in any system, the evaluation of operational suitability will include a demonstrated capability to maintain the software. Program managers must sustain an operationally realistic maintenance test environment in which software patches can be developed and upgrades of all kinds (developed or commercial) can be tested.

(1) IOT&E or a prior test event will include an end-to-end demonstration of regression test, preferably automated, in the maintenance test environment from requirements to test scripts to defect tracing.

(2) IOT&E or a prior test event will include a demonstration of processes used to update the maintenance test environment so as to replicate deficiencies first found in the operational environment.

d. Risk-Assessed Level of Operational Test for Software Acquisitions

(1) OT&E for software acquisitions will be guided by the assessment of operational risks of mission failure. A significant operational risk of mission failure is a risk that is at least moderately likely to occur, and if the risk does occur then the impact will cause a degradation or elimination one or more operational capabilities.

(2) At any level of risk, the lead OTA will observe testing. At the lowest risk level, the lead OTA will review plans and observe developmental testing or developmental testing and integrated testing. At the highest risk level, the lead OTA will execute a full OT&E in accordance with the DOT&E-approved OTP. For intermediate risks, the lead OTA will coordinate with the responsible developmental testing organization to observe and execute some integrated developmental testing/operational testing in accordance with a DOT&E-approved OTP.

(3) OT&E for limited fieldings of Incrementally Fielded Software Intensive Programs will normally consist of some level of OTA observation of pre-deployment user acceptance tests (or equivalent) performed by the program. In all cases, the lead OTA will inform DOT&E of the outcome of the OT&E. The DOT&E will then determine whether a formal report is required.

(4) IOT&E for Incrementally Fielded Software Intensive Programs will normally consist of a full IOT&E event prior to the Full Deployment Decision. The IOT&E events will be guided by an updated assessment of the operational risks in the capabilities and system interactions that have not been successfully evaluated in previous operational testing.

e. Cybersecurity

(1) Beginning at Milestone A, the TEMP will document a strategy and resources for cybersecurity T&E. At a minimum, software in all systems will be assessed for vulnerabilities. Higher criticality systems will also require penetration testing from an emulated threat in an operationally realistic environment during OT&E.

(2) Beginning at Milestone B, appropriate measures will be included in the TEMP and used to evaluate operational capability to protect, detect, react, and restore to sustain continuity of operation. The TEMP will document the threats to be used, which should be selected based on the best current information available from the intelligence community.

(3) The Program Manager, T&E subject matter experts, and applicable certification stakeholders will assist the user in writing testable measures for cybersecurity and interoperability.

8. LFT&E. 10 U.S.C. 2366 (Reference (n)) mandates the LFT&E and formal LFT&E reporting for all covered systems, as determined by DOT&E, including Accelerated Acquisitions, survivability improvement, and kit programs to address urgent needs. DOT&E will require approval of LFT&E strategies and LFT&E test plans (including survivability test plans) for covered systems as defined in section 2366. The DOT&E will determine the quantity of test articles procured for all LFT&E test events for any system under DOT&E LFT&E oversight.

9. RESOURCES AND SCHEDULE. All TEMPs will identify the resources needed to execute the planned T&E activities. Resource estimates will be matched against the schedule and justified by analysis in the TEMP. All TEMPs will contain an updated integrated test program summary and master schedule of all major test events or test phases, to include LFT&E events.

a. Resource estimates (including but not limited to quantities of test articles, targets, expendables, threat simulations, operational forces, etc.) will be derived from defensible statistical measures of merit (power and confidence) associated with the coverage of the factors in a quantification of test risk. Specifically, the TEMP must discuss and display the calculations done to derive the content of testing and to develop the associated resource estimates.

b. The Program Manager and Services or Agencies will allocate the resources identified in the TEMP. Each TEMP update will include an updated and complete T&E resource estimate.

c. Test infrastructure and tools to be used in operational tests must undergo verification, validation, and accreditation (VV&A) by the intended user or appropriate agency. Test infrastructure, tools, and the VV&A strategy will be documented in the TEMP, including the associated required resources.

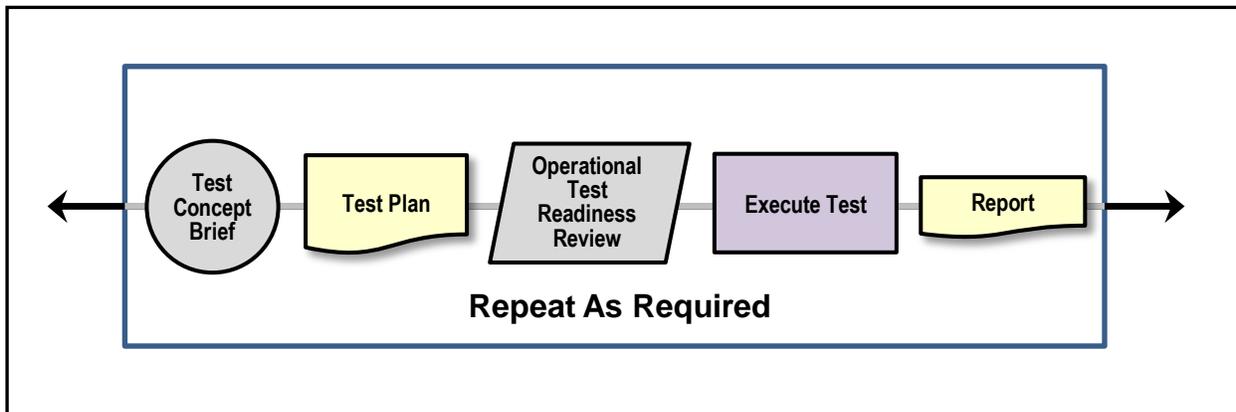
d. In accordance with 10 U.S.C. 2399 (Reference (n)), DOT&E will approve the quantity of test articles required for all operational test events for any system under DOT&E oversight. The DoD Component OTA will determine the quantity for programs that are not under DOT&E oversight.

e. The T&E schedule will be event-driven and allow adequate time to support pre-test predictions; testing; post-test analysis, evaluation, and reporting; reconciliation of predictive models; and adequate time to support execution of corrective actions in response to discovered deficiencies.

f. For software acquisitions employing limited fieldings, the Milestone B TEMP will show a general schedule for the routine test sequence (developmental tests, certifications, integrated and operational tests) that will occur with every limited fielding within the allotted time for each limited fielding.

10. OPERATIONAL AND LIVE FIRE T&E EXECUTION. The general process for planning, executing, and reporting on operational and major live fire test events is shown in Figure 9.

Figure 9. Operational or Major Live Fire Test Event:  
Planning, Approval, Execution, and Reporting



a. Planning Test Events

(1) For all programs on DOT&E oversight, including Accelerated Acquisitions, DOT&E will approve OTPs and LFTPs prior to the corresponding operational or major live fire test events in accordance with 10 U.S.C. 2399 (Reference (n)). DOT&E will approve any LFTP for a major test event such as Full-up System Level test, Total Ship Survivability Trial, or Full Ship Shock Trials. The major live fire test events will be identified in the TEMP (or LFT&E strategy or equivalent document). Test plans are developed by a lead test organization (LTO). The LTO is the lead OTA for OT&E. The LTO varies for LFT&E.

(2) For programs on DOT&E oversight, the lead LTO will brief the DOT&E on T&E concepts for the OTP or the major LFT&E as early as possible and not less than 180 calendar days prior to start of any such testing. DOT&E and DoD Component leads will be kept apprised of changes in test concept and progress on the OTP. The lead OTA will deliver the

DoD Component-approved OTP or major LFTP for DOT&E review not later than 60 calendar days before test start. The LTO for major live fire events will deliver the DoD Component-approved LFTP for DOT&E review not later than 90 days before test start.

(3) Operational and major LFTPs will include the plans for data collection and management.

(4) Integrated Testing: Data collected outside an approved OTP or major LFTP can be used for a DOT&E operational or live fire evaluation if the data is approved by DOT&E. Depending on circumstances, DOT&E approval will not necessarily be possible in the TEMP and may require some other documentation. Data approval will be based on understanding of the realism of the test scenario(s) used and the pedigree (test conditions and methodologies) of the data. The data in question will typically come from developmental test events in operationally relevant environments. Data approval should be coordinated with the LTO and DOT&E prior to the start of testing. When advance coordination is not possible, the LTO will facilitate data re-use (in a DOT&E assessment or evaluation) through independent documentation of the test data pedigree (test conditions and methodologies).

(5) In OT&E, typical users or units will operate and maintain the system or item under conditions simulating combat stress in accordance with 10 U.S.C. 139 (Reference (n)) and peacetime conditions, when applicable. The lead OTA, user, and Program Manager will identify realistic operational scenarios based on the concept of operations (per paragraph 5.d.(1) in this enclosure, and mission threads derived from the Joint Mission Essential Task List or DoD Component-specific Mission Essential Task List. See paragraph 7.d of this enclosure for risk-assessed OT&E of software acquisitions.

(6) In accordance with 10 U.S.C. 2399 (Reference (n)), persons employed by the contractor for the system being developed may only participate in OT&E of systems on OSD OT&E oversight to the extent they are planned to be involved in the operation, maintenance, and other support of the system when deployed in combat.

(a) A contractor that has participated (or is participating) in the development, production, or testing of a system for a DoD Component (or for another contractor of the DoD) may not be involved in any way in establishing criteria for data collection, performance assessment, or evaluation activities for OT&E.

(b) These limitations do not apply to a contractor that has participated in such development, production, or testing, solely in test or test support on behalf of the DoD.

(7) IOT&E for all programs will use production or production-representative test articles that, at a minimum, will incorporate the same parts and software items to be used in LRIP articles. DOT&E will evaluate whether test articles are production-representative according to these criteria:

(a) The hardware and software must be as defined by the system-level critical design review, functional configuration audit, and system verification review, including correction of appropriate major deficiencies identified during prior testing.

(b) For hardware acquisitions, production-representative articles should be assembled using the parts, tools, and manufacturing processes intended for use in full-rate production; utilize the intended production versions of software; and the operational logistics systems including mature drafts of maintenance manuals intended for use on the fielded system should be in place. The manufacturing processes to be used in full-rate production should be adhered to as closely as possible, and program managers for programs on DOT&E OT&E oversight will provide DOT&E a detailed description of any major manufacturing process changes.

(c) For software acquisitions, a production-representative system consists of typical users performing operational tasks with the hardware and software intended for deployment, in an operationally realistic computing environment, with representative Computer Network Defense capabilities. All manuals, training, helpdesk, continuity of operations, system upgrade and other life-cycle system support should be in place.

(8) IOT&E will require more than an evaluation that is based exclusively on computer modeling, simulation, or an analysis of system requirements, engineering proposals, design specifications, or any other information contained in program documents in accordance with 10 U.S.C. 2399 and 2366 (Reference (n)). IOT&E will feature end-to-end testing of system capabilities including all interrelated systems needed to employ and support those capabilities.

(9) Program managers for all programs (and particularly Accelerated Acquisitions) may, in coordination with the lead OTA, elect to perform testing in conjunction with training, joint and operational exercises, or synchronized test events. Such testing is efficient, but inherently increases the risk that a significant problem will not be discovered. If such testing is the sole form of operational testing prior to fielding, then additional testing will typically be required subsequent to initial fielding. When subsequent testing is required, the plan for the T&E and reporting of results will be included in the applicable TEMP or other planning documentation.

b. Conducting Test Events

(1) Test plans must consider the potential impacts on the environment, in accordance with 42 U.S.C. 4321-4347 (Reference (ao)) and Executive Order 12114 (Reference (ap)), and on personnel. The Program Manager, working with the user and the T&E community, will provide safety releases (to include formal environment, safety, and occupational health risk acceptance in accordance with section 16 of Enclosure 3 of this instruction) to the developmental and operational testers prior to any test that may impact safety of personnel.

(2) Barring significant unforeseen circumstances, all elements of an approved OTP or LFTP must be fully satisfied by the end of an operational or live fire test. If an approved plan cannot be fully executed, DOT&E concurrence with any changes must be obtained before revised test events are executed. Once testing has begun, deviations from approved elements of the test plan cannot be made prior to the beginning of their execution without consultation with

the OTA commander and the concurrence of DOT&E. DOT&E concurrence is not required when a need to change the execution of an element of the test plan arises in real time as its execution is underway. If DOT&E on-site representatives are not present and the test director concludes changes to the plan are warranted that would revise events yet to be conducted, the test director must contact the relevant DOT&E personnel to obtain concurrence with the proposed changes. If it is not possible to contact DOT&E personnel in a timely manner, the test director can proceed with execution of the revised test event but must inform DOT&E of the deviations from the test plan as soon as possible.

(3) Operating instructions (i.e., tactics, techniques and procedures, standard operating procedures, technical manuals, technical orders) should be considered for their impact on the test outcomes and included in OTPs when relevant.

(4) Test plans must include the criteria to be used to make routine changes (delays for weather, test halts, etc.).

(5) If required data for the test completion criteria are lost, corrupted, or not gathered, then the test is not complete unless the requirement is waived by DOT&E.

c. Data Management, Evaluation, and Reporting

(1) DOT&E, the Program Manager and their designated representatives who have been properly authorized access, will all have full and prompt access to all records, all reports, and all data, including but not limited to data from all tests, system logs, execution logs, test director notes, and user and operator assessments and surveys. All data include but are not limited to classified, unclassified, and (when available) competition sensitive or proprietary data. Data may be preliminary and will be identified as such.

(2) OTAs and other T&E agencies will record every OT&E and LFT&E event in some written form. Full reports will often contain multiple test events, and will be accomplished in the most timely manner practicable. Interim summaries or catalogues of individual events will be prepared as results become available.

(3) Significant problems will be reported promptly to senior DoD leadership when those problems are identified. OTAs will publish interim test event summaries as interim reports when the test events provide information of immediate importance to the program decision makers. This will occur particularly in support of Accelerated Acquisitions and time critical operational needs. Such reports should provide the most complete assessment possible based on the available data and should not be delayed. Such reports will be followed by the planned comprehensive reporting.

(4) For DOT&E OT&E and LFT&E oversight programs, DOT&E will be kept informed of available program assets, assessments, test results and anticipated timelines for reporting throughout report preparation.

(5) The Program Manager and test agencies for all programs will provide the Defense Technical Information Center (DTIC) with all reports, and the supporting data and metadata for the test events in those reports. If there are limitations in the data or metadata that can be provided to DTIC, those limitations will be documented in the TEMP starting at Milestone B.

(6) Test agencies will provide DTIC with a descriptive summary and metadata for all accredited models or simulations that can potentially be reused by other programs.

(7) The Secretaries of the Military Departments, in coordination with the DAE, DOT&E, and the Under Secretary of Defense for Personnel and Readiness, will establish a common set of data for each major weapon system type to be collected on damage incurred during combat operations. This data will be stored in a single dedicated and accessible repository at DTIC. The lessons learned from analyzing this data will be included, as appropriate, in both the capability requirements process and the acquisition process for new acquisitions, modifications, and/or upgrades.

11. OPERATIONAL TEST READINESS. The DoD Components will each establish an Operational Test Readiness Review process to be executed for programs on DOT&E oversight prior to any Operational Test. Prior to IOT&E, the process will include a review of DT&E results, an assessment of the system's progress against the key performance parameters, key system attributes, and critical technical parameters in the TEMP, an analysis of identified technical risks to verify that those risks have been retired or mitigated to the extent possible during DT&E and/or OT&E, a review of system certifications, and a review of the IOT&E entrance criteria specified in the TEMP.

12. CERTIFICATIONS. Testing in support of certifications should be planned in conjunction with all other testing.

a. The Program Manager is responsible for determining what certifications are required; ensuring involvement of the representatives of applicable certifying authorities in the T&E Working Integrated Product Team; and satisfying the certification requirements.

b. The Program Manager will provide the MDA, DOT&E, and the lead OTA with all data on certifications as requested.

c. In accordance with DoD Instruction 4630.8 (Reference (aj)), the TEMP for all programs must reflect interoperability and supportability requirements, and serve as the basis for interoperability assessments and certifications.

13. TEMP EVOLUTION THROUGH THE ACQUISITION MILESTONES. The preceding policies are summarized together with associated DOT&E guidance and TEMP outlines at <http://www.dote.osd.mil/TempGuide>.

ENCLOSURE 6

LIFE-CYCLE SUSTAINMENT PLANNING

1. PURPOSE. This enclosure describes the application of life-cycle sustainment planning policies and procedures. The enclosure addresses sustainment across the life cycle, and the elements of the Life-Cycle Sustainment Plan (LCSP).

2. SUSTAINMENT ACROSS THE LIFE CYCLE. Sustainment planning, including the requirements in 10 U.S.C. 2337 (Reference (n)), and in Appendix E to Enclosure B of the “Manual for the Operation of the Joint Capabilities Integration and Development System” (Reference (s)), must be an integral element of the capability requirements and acquisition process from inception.

a. The Program Manager will:

(1) Develop and implement an affordable and effective performance-based product support strategy. The product support strategy will be the basis for all sustainment efforts and lead to a product support package to achieve and sustain warfighter requirements.

(a) The product support strategy will address, at a minimum:

1. An integrated product support capability implementing the program’s mix of government and industry providers supported by appropriate analyses included in 10 U.S.C. 2337 (Reference (n)).

2. Sustainment metrics mapped to the sustainment key performance parameter and key system attributes to manage sustainment performance.

3. Implementation of a reliability improvement program based on Failure Modes, Effects and Critically Analysis, other engineering data developed during the systems engineering process, system health information generated by applicable on-board and off-board technologies, and data sources in accordance with DoD Instruction 4151.22 (Reference (bp)).

4. Competition, or the option of competition, at both the prime and subcontract levels for both large and small businesses, and both system and sub-system levels.

5. The necessary intellectual property deliverables and associated license rights, consistent with and integrated with the program Intellectual Property Strategy (see paragraph 7.d of Enclosure 2).

6. The use of existing government owned inventory prior to use of product support arrangements as required in 10 U.S.C. 2337 (Reference (n)).

7. The government accountable property system that documents all government owned property whether it is held and managed by the government, contractor, or third party, in accordance with 40 U.S.C. 524 (Reference (q)).

(b) Product support integrators and product support providers may be organic, commercial, or a combination.

(2) Employ effective Performance-Based Logistics planning, development, implementation, and management in developing a system's product support arrangements. Performance-Based Logistics (also known as performance-based life-cycle product support) ties objective metrics delivered logistical system performance to incentives that will motivate the support provider.

(3) Continually assess and refine the product support strategy based on projected and actual performance.

(4) Employ a "Should-Cost" management and analysis approach to identify and implement system and enterprise sustainment cost reduction initiatives. Should-cost targets will be established and reviewed periodically based on analysis of acquisition sustainment costs and operations and support cost element drivers. Program managers will capture product support metrics and cost data in Component- and DoD-level information systems, and track performance against should-cost targets.

(5) Continually monitor product support performance and correct trends that could negatively impact availability and cost.

(6) Begin demilitarization and disposal planning of system, subsystems, or components, with sufficient lead time before the disposal or retirement of the first asset to reduce costs and risks and to ensure compliance with statutory and regulatory requirements.

b. DoD Components will:

(1) Ensure that sustainment factors are fully considered at all key life-cycle management decision points, and that appropriate measures are taken to reduce operating and support costs by influencing system design early in development, developing sound product support strategies, and addressing key drivers of cost.

(2) Periodically assess product support performance and assist program managers, users, resource sponsors, and materiel enterprise stake holders to take corrective action to prevent degraded materiel readiness or operations and support cost growth.

(3) Initiate system modifications, as necessary, to improve performance and reduce ownership costs, as constrained by 10 U.S.C. 2244a (Reference (n)).

3. LIFE-CYCLE SUSTAINMENT PLAN (LCSP). Program managers for all programs are responsible for developing and maintaining an LCSP consistent with the product support strategy, beginning at Milestone A. The plan will describe sustainment influences on system design and the technical, business, and management activities to develop, implement, and deliver a product support package that maintains affordable system operational effectiveness over the system life cycle and seeks to reduce cost without sacrificing necessary levels of program support. The Acquisition Strategy will also include an overview of the product support strategy and sustainment-related contracts.

a. The Under Secretary of Defense for Acquisition, Technology and Logistics (USD(AT&L)) will approve acquisition category (ACAT) ID, ACAT IAM, and USD(AT&L)-designated special interest program LCSPs at each decision point.

b. The Component Acquisition Executive, or designee, will approve LCSPs for ACAT IC, ACAT IAC, and ACAT II and below programs at each acquisition decision point after the Materiel Development Decision.

c. The LCSP will be updated at each decision point to reflect the increased maturity of the product support strategy, any changes in the corresponding product support package, current risks, and any cost reduction activities.

(1) At Milestone A, the LCSP will focus on development of sustainment metrics to influence design, the product support strategy, and on actions that can be taken prior to Milestone B to reduce future operating and support costs. Planning will use factors and assumptions consistent with those used in the analysis of alternatives and affordability analysis, or justify any deviation from those factors and assumptions.

(2) At the Development Request for Proposals Release Decision Point and Milestone B, the LCSP will focus on finalizing the sustainment metrics, integrating sustainment considerations with design activities, and refining the execution plan for the design, acquisition, fielding, and competition of sustainment activities.

(3) At Milestone C, if applicable, the LCSP will focus on ensuring operational supportability and verifying performance. It will include a comprehensive description of the product support package elements, competition, and fielding plan.

(4) At the Full-Rate Production Decision or Full Deployment Decision, the LCSP will focus on how sustainment performance is measured, managed, assessed, and reported; and the actions to adjust the product support package to ensure continued competition and cost control while meeting warfighter mission requirements.

(5) After Initial Operational Capability (IOC), the LCSP is the principle document governing the system's sustainment. Programs will update the plan whenever there are changes to the product support strategy, or every 5 years, whichever occurs first, supported by appropriate analyses, sustainment metrics, sustainment costs, system components or configuration (hardware and software), environmental requirements, and disposal plans or costs.

d. The LCSP will include the following annexes:

(1) Business Case Analyses. The Program Manager will attach relevant assumptions, constraints, and analyses used to develop the product support strategy to the LCSP. The Defense Logistics Agency will participate in supply support related business case analyses by developing and providing data for ACAT I, II, and III programs. Product Support Managers will revalidate analyses based on changes to the assumptions, constraints, and operating environment, or every 5 years, whichever occurs first.

(2) Core Logistics Analysis. By Milestone A, the DoD Component will document its determination of applicability of core depot-level maintenance and repair capability requirements in the LCSP in accordance with 10 U.S.C. 2366a (Reference (n)). For Milestone B, the Program Manager will attach the program's estimated requirements for maintenance, repair and associated logistics capabilities and workloads to the LCSP in accordance with section 2366b. The program's maintenance plan will ensure that core depot-level maintenance and repair capabilities and capacity are established not later than 4 years after initial operational capability in accordance with 10 U.S.C. 2464 (Reference (n)). The Program Manager will ensure that a depot source of repair designation is made not later than 90 days after CDR, and that supportability analysis includes detailed requirements for core depot-level maintenance and repair capabilities, and associated sustaining workloads required to support such requirements.

(3) Preservation and Storage of Unique Tooling Plan. For MDAPs, the plan, as outlined and required by section 815 of P.L. 110-417 (Reference (m)), is prepared to support Milestone C. It must include the review cycle for assessing tool retention across the life of the system. If an MDA (other than the DAE) determines that preservation and storage of unique tooling is no longer required, a waiver will be submitted to the DAE for notification to Congress.

(4) Additional Annexes. Program Managers will consider including additional annexes, or reference other documents that integrate a program's sustainment planning or product support strategy.

e. Life-cycle sustainment for information systems may be provided via multiple approaches, including Service Level Agreements, Support Agreements, performance work statements, and enterprise services. Where feasible and as approved by the MDA, programs may employ portfolio-level documents to satisfy their LCSP requirements. Commercial off-the-shelf and government off-the-shelf products used as intended will normally be supported via standard warranties and support agreements. Effective life-cycle sustainment requires continuous monitoring to ensure investments are maintained at the right size, cost, and condition, to include vulnerability management, to support warfighter and business missions and objectives. Information technology investment LCSPs will address Management-in-Use guidelines published in Office of Management and Budget Circular A-11 (Reference (c)).

f. Defense business systems Program Managers will include an updated summary of life-cycle sustainment planning in the business case for each decision point.

4. SUSTAINMENT METRICS. The sustainment key performance parameter (Availability) is as critical to a program's success as cost, schedule, and performance. ACAT I and II Program Managers will use availability and sustainment cost metrics as triggers to conduct further investigation and analysis into drivers of those metrics, to develop "should cost targets," and to develop strategies for improving reliability, availability, and maintainability of such systems at a reduced cost. The materiel availability portion of the key performance parameter will be based on the entire system inventory and supported by the following sustainment metrics:

a. Materiel Reliability. As required by the "Manual for the Operation of the Joint Capabilities Integration and Development System" (Reference (s)), materiel reliability is the design metric that has the most significant impact on the program's operational availability and operating and support cost.

b. Operating and Support Cost. DoD Components will ensure reliability and maintainability data from operational and developmental testing and evaluation and fielding informs estimates of operating and support costs for major weapon systems.

c. Mean Down Time. The average total downtime required to restore an asset to its operational capability, measures the effectiveness of the supply chain and support infrastructure (e.g., customer wait time, logistics response time, retrograde time). It is an important element in assessing a system's affordability across its life cycle and identifies constraints and opportunities of a system's product support strategy and product support arrangements.

d. Other metrics. Outcome metrics to support sustainment elements included in capability requirements documentation or required by the DoD Component to manage the system development, product support package, and supply chain to develop and maintain the system.

#### 5. PRODUCT SUPPORT REVIEWS

a. The program's Product Support Manager will assess logistics as a focused part of the program's Systems Engineering Assessments and technical reviews (e.g., system engineering, test) to ensure the system design and product support package are integrated to achieve the sustainment metrics and inform applicable modeling and simulation tools.

b. The DoD Components will conduct independent logistics assessments for all ACAT I and II programs prior to key acquisition decision points (including milestone decisions) to assess the adequacy of the product support strategy, and to identify features that are likely to drive future operating and support costs, changes to system design that could reduce costs, and effective strategies for managing such costs. The reviews will focus on sustainment planning and execution, to include the core logistics analyses and establishment of organic capabilities. Each DoD Component will establish its criteria for independence, and provide guidance to ensure consistency within the respective Component. At a minimum, these reviews will be chartered by the Component Acquisition Executive and conducted by logistics, program management, and business experts from outside the program office.

c. After IOC, the DoD Components will continue to conduct independent logistics assessments at a minimum interval of every 5 years. DoD Components will provide results for ACAT I programs to the Assistant Secretary of Defense for Logistics and Materiel Readiness. Assessments will focus on the weapon system-level product support performance in satisfying warfighter needs, meeting sustainment metrics, and providing best-value outcomes. They must specifically assess operating and support costs to identify and address factors resulting in growth in operating and support costs and adapt strategies to reduce such costs. Results will inform LCSP and analyses updates.

ENCLOSURE 7

HUMAN SYSTEMS INTEGRATION (HSI)

1. PURPOSE. This enclosure describes the human systems integration policies and procedure applicable to defense acquisition programs.

2. GENERAL. The Program Manager will plan for and implement human systems integration (HSI) beginning early in the acquisition process and throughout the product life cycle. The goal will be to optimize total system performance and total ownership costs, while ensuring that the system is designed, operated, and maintained to effectively provide the user with the ability to complete their mission. The Program Manager will ensure that HSI is considered at each program milestone during the program life cycle.

3. HUMAN SYSTEMS INTEGRATION PLANNING. Human systems integration planning and implementation will address:

a. Human Factors Engineering. The Program Manager will take steps (e.g., contract deliverables and government/contractor integrated product teams) to ensure ergonomics, human factors engineering, and cognitive engineering is employed during systems engineering over the life of the program to provide for effective human-machine interfaces and to meet human systems integration requirements. System designs will minimize or eliminate system characteristics that require excessive cognitive, physical, or sensory skills; entail extensive training or workload-intensive tasks; result in mission-critical errors; or produce safety or health hazards.

b. Personnel. The Program Manager will, in conjunction with designated DoD Component HSI staff, define the human performance characteristics of the user population based on the system description, projected characteristics of target occupational specialties, and recruitment and retention trends. To the extent possible, systems will not require special cognitive, physical, or sensory skills beyond that found in the specified user population. For those programs that have skill requirements that exceed the knowledge, skills, and abilities of current military occupational specialties, or that require additional skill indicators or hard-to-fill military occupational specialties, the Program Manager will consult with personnel communities to mitigate readiness, personnel tempo, and funding issues.

c. Habitability. The Program Manager will, in conjunction with designated DoD Component staff, establish requirements for the physical environment (e.g., adequate space and temperature control) and, if appropriate, requirements for personnel services (e.g., medical and mess) and living conditions (e.g., berthing and personal hygiene) for conditions that have a direct impact on meeting or sustaining system performance or that have such an adverse impact on quality of life and morale that recruitment or retention is degraded.

d. Manpower. In advance of contracting for operational support services, the Program Manager will, in conjunction with the designated DoD Component HSI staff determine the most efficient and cost-effective mix of DoD manpower and contract support. The mix of military, DoD civilian, and contract support necessary to operate, maintain, and support (to include providing training) the system will be determined based on the manpower mix criteria (DoD Instruction 1100.22 (Reference (bq))) and will be reported in the Manpower Estimate (see the Defense Acquisition Guidebook (Reference (l)) for additional details about the Manpower Estimate). Economic analyses used to support workforce mix decisions will use costing tools, to include DoD Instruction 7041.04 (Reference (br)), that account for fully loaded costs (i.e., all variable and fixed costs, compensation and non-compensation costs, current and deferred benefits, and cash and in-kind benefits) approved by the Component manpower authority. The Manpower Estimate is approved by the DoD Component manpower authority and serves as the authoritative source for reporting manpower in other program documentation.

e. Training. The Program Manager will, in conjunction with designated DoD Component staff, develop options for individual, collective, and joint training for operators, maintainers and support personnel, and, where appropriate, base training decisions on training effectiveness evaluations (which can be integrated with other test and evaluation). The major tasks identified in the job task analysis, training device document coordinating paper and training plans will support a comprehensive analysis with special emphasis on options that enhance user capabilities, maintain skill proficiencies, and reduce individual and collective training costs. The Program Manager will develop cost-effective training system plans to incorporate the use of new learning techniques, simulation technology, embedded training and distributed learning in accordance with DoD Instruction 1322.26 (Reference (bs)), and instrumentation systems that provide “anytime, anyplace” training and reduce the demand on the training establishment. Where cost effective and practical, the Program Manager will use simulation-supported embedded training, and the training systems will fully support and mirror the interoperability of the operational system in accordance with DoD Directive 1322.18 (Reference (bt)).

f. Safety and Occupational Health. The Program Manager will ensure that appropriate human systems integration and environmental, safety, and occupational health efforts are integrated across disciplines and into systems engineering to determine system design characteristics that can minimize the risks of acute or chronic illness, disability, or death or injury to operators and maintainers; and enhance job performance and productivity of the personnel who operate, maintain, or support the system.

g. Force Protection and Survivability. The Program Manager will assess risks to personnel, and address, in terms of system design, protection from direct threat events and accidents (such as chemical, biological, and nuclear threats). Design consideration will include both primary and secondary effects from these events and consider any special equipment necessary for egress and survivability.

ENCLOSURE 8

AFFORDABILITY ANALYSIS AND INVESTMENT CONSTRAINTS

1. PURPOSE. This enclosure establishes the fundamental concepts and approaches for developing and applying affordability constraints to acquisition programs as part of life-cycle investment analysis, decision making, and management.

2. OVERVIEW

a. Responsibility. Affordability Analysis is a DoD Component leadership responsibility that should involve the Component's programming, resource planning, requirements, intelligence, and acquisition communities. The Department has a long history of starting programs that proved to be unaffordable. The result of this practice has been costly program cancelations and dramatic reductions in inventory objectives. Thus, the purpose of Affordability Analysis is to avoid starting or continuing programs that cannot be produced and supported within reasonable expectations for future budgets. Affordability constraints for procurement and sustainment will be derived early in program planning processes. These constraints will be used to ensure capability requirements prioritization and cost tradeoffs occur as early as possible and throughout the program's life cycle.

b. The intent of this policy is to require affordability analysis that addresses the total life cycle of the planned program - including beyond the Future Years Defense Program (FYDP). Program life-cycle affordability is a cornerstone of DoD acquisition planning as indicated in DoD Directive 5000.01 (Reference (a)). Affordability within the FYDP is also part of the Milestone Decision Authority (MDA) certification and monitoring required by 10 U.S.C. 2366b (Reference (n)) for Major Defense Acquisition Programs (MDAPs) at and beyond Milestone B. However, assessing life-cycle affordability of new and upgraded systems is crucial for establishing fiscal feasibility of the program, informing Analyses of Alternatives, guiding capability requirements and engineering tradeoffs, and setting realistic program baselines to control life-cycle costs and help instill more cost-conscious management in the DoD. Affordability analysis and management necessitates effective and ongoing communication with the requirements community on the cost and risk implications of capability requirements.

c. Affordability analysis and constraints are not intended to produce rigid, long-term plans. Rather, they are tools to promote responsible and sustainable investment decisions by examining the likely long-range implications of today's capability requirements choices and investment decisions based on reasonable projections of future force structure equipment needs—before substantial resources are committed to a program.

d. Affordability analysis and affordability constraints are not synonymous with cost estimation and approaches for reducing costs. Constraints are determined in a top-down manner by the resources a Component can allocate for a system, given inventory objectives and all other fiscal demands on the Component. Constraints then provide a threshold for procurement and

sustainment costs that cannot be exceeded by the Program Manager. On the other hand, cost estimates are generated in a bottom-up or parametric manner and provide a forecast of what a product will cost for budgeting purposes. The difference between the affordability constraints and the cost estimates indicates whether actions must be taken to further reduce cost in order to remain within affordability constraints. Independent of affordability constraints or cost estimates, program managers should always be looking for ways to control or reduce cost. Proactive cost control is central to maximizing the buying power of the Department and should be an integral part of all phases and aspects of program management. Cost control approaches are discussed in Enclosure 10 of this instruction.

e. When approved affordability constraints cannot be met—even with aggressive cost control and reduction approaches—then technical requirements, schedule, and required quantities must be revisited; this will be accomplished with support from the Component’s Configuration Steering Board, and with any requirements reductions proposed to the validation authority. If constraints still cannot be met, and the Component cannot afford to raise the program’s affordability cap(s) by lowering constraints elsewhere and obtaining MDA approval, then the program will be cancelled.

3. LIFE- CYCLE AFFORDABILITY ANALYSIS. DoD Components are responsible for developing life-cycle affordability constraints for Acquisition Category (ACAT) I and IA acquisition programs for procurement unit cost and sustainment costs by conducting portfolio affordability analyses that contain a product life-cycle funding projection and supporting analysis. The basic procurement unit cost calculation is the annual estimated procurement budget divided by the number of items that should be procured each year to sustain the desired inventory. (As a simple example, if a Component plans to maintain an inventory of 200,000 trucks, and the trucks have an expected service life of 20 years, then an average of 10,000 trucks must be procured each year. If the Component can afford to spend an average of \$1 billion per year on trucks, then the affordability constraint for procurement is \$1 billion divided by 10,000, or \$100,000 per truck. The Component’s requirements for a new truck must be restricted to those that can fit into a \$100,000 package. Similar calculations will be made to derive sustainment affordability constraints.) If they are provided, Components will use office of the Under Secretary of Defense for Acquisition, Technology and Logistics standardized portfolios for their analysis. Portfolios can be based on mission areas or commodity types, and will define a collection of products that can be managed together for investment analysis and oversight purposes. Components will normally make tradeoffs within portfolios, but if necessary, can and should make tradeoffs across portfolios to provide adequate resources for high-priority programs.

a. A Product Life Cycle, Component Portfolio Analysis (30 to 40 Years Nominal). Component leadership—not the acquisition community or program management—conducts affordability analysis with support and inputs from their programming, resource planning, requirements, intelligence, and acquisition communities. Each Component determines the processes and analytic techniques they use for affordability analysis within the following basic constructs:

(1) Future Budget. A future total budget projection for each DoD Component for affordability analysis provides the first-order economic estimate for allocation of future resources to each portfolio. This projection establishes a nominal rather than optimistic foundation for the future and covers all fiscal demands that compete for resources in the Component, including those outside acquisition and sustainment.

(2) Time Horizon. Component level affordability analysis examines all programs and portfolios together, extending over enough years to reveal the life-cycle cost and inventory implications of planned program for the Component. The same analysis is used as individual programs come up for review. Nominally, affordability analysis covers 30 to 40 years into the future.

(3) Consistency. The aggregation of portfolio cost estimates for each year, when combined with all other fiscal demands on the Component, may not exceed the Component's reasonably anticipated future budget levels.

(4) Fiscal Guidance. Absent specific Component-level guidance by the Director of Cost Assessment and Program Evaluation or the Defense Acquisition Executive, each Component projects its topline budget beyond the FYDP using the average of the last 2 years of the current FYDP and the OSD inflator provided by the Under Secretary of Defense (Comptroller) (USD(C)), resulting in zero real growth.

(5) Inflators. Affordability analysis assumes constant purchasing power. Each Component uses the OSD inflator provided by USD(C) in the Component's future total budget projection and to inflate their cost estimates for comparison against affordability constraints, assuming budgets will be adjusted later for any differential inflator issues.

(6) Portfolios. Components will subdivide their accounts into portfolios to facilitate trade-off analysis; but when summed, the total cost for all portfolios and their elements cannot be above the Component's future total budget projection. Components may use existing affordability portfolios, which will be stable between affordability analysis updates. When the analysis is presented for a specific program's review, the Component will employ the relevant portfolio to facilitate understanding and discussion of life-cycle costs and inventories of related acquisition systems.

(7) Other Portfolio Plans. The Component's affordability analyses should be consistent with any relevant existing portfolio plans and strategies such as those required by statute (i.e., the 30-year plans required by 10 U.S.C. 231 (for ships) and 10 U.S.C. 231a (Reference (n)) (for aircraft)).

(8) Affordability Analysis Updates. Each Component maintains and updates its affordability analysis as needed at the Component or portfolio level to reflect significant changes such as large cost growths in portfolios and programs, changes in defense strategy, force structure changes, or major budgetary changes.

b. Affordability Analysis Output Format. Each Component's affordability analysis is presented within the governance framework to the MDA in preparation for major acquisition decisions in a format that demonstrates the affordability of the program within the Component and portfolio context, to ensure that the resulting affordability constraints are understood and consistent with the future total budget projection. Transparency ensures that the risk, cost implications, and alternatives of system acquisitions and sustainment are sufficiently understood by the Component leadership and the programming, resource planning, requirements, intelligence, and acquisition communities.

(1) Data Format

(a) In general, standardized stacked area charts (or "sand charts") and spreadsheets listing the estimated budget by year for each element of the analysis, are adequate. The data should compare life-cycle estimates to the historical experience within the portfolio and the Component for sustainment and procurement costs.

(b) At each major acquisition decision meeting, the DoD Component will provide stacked area charts ("sand charts") and underlying spreadsheet data showing the program's budget, what portfolio it fits within, and the top-level total of all portfolios and accounts totaling at or below the future total budget projection, equivalent to Total Obligation Authority. Additional detail and samples of the sand charts are presented in the Defense Acquisition Guidebook (Reference (1)).

(2) Data Requirements for Programs. Affordability Analysis must be consistent with the data in the Cost Analysis Requirements Description for a program under review, including the capability requirements, quantity, and schedule used in the analysis. Affordability Analysis also provides data to support the procurement and sustainment constraints that will be documented in the acquisition decision memorandums (ADMs) resulting from the Materiel Development Decision, Milestone A, and Development Request for Proposals (RFP) Release Decision Point, and in the acquisition program baselines normally set at Milestone B and beyond.

c. Timing of Affordability Analysis. Affordability Analysis should be conducted as early as possible in a system's life cycle so that it can inform early capability requirements trades and the selection of alternatives to be considered during the Analysis of Alternatives (AoA). Affordability constraints are not required before the Materiel Development Decision; however, conducting some analysis before that point is beneficial. The best opportunity for ensuring that a program will be affordable is through tailoring capability requirements before and during the AoA(s) and early development. Thus, the Components will incorporate estimated funding streams for future programs within their affordability analyses at the earliest conceptual point and specify those estimates at the Materiel Development Decision and beyond to inform system design and alternative selection.

d. Importance of AoAs to Affordability. Examination of key requirements cost-performance relationships, when merged with affordability analysis results during AoAs, provides the information needed to support sound material solution decisions about affordable products.

e. Affordability Constraints: Goals and Caps

(1) Affordability constraints are established to inform the capability requirements validation authority, Program Manager, and AoA team of the cost limitations dictated by the Component's affordability analysis. Early in a program, affordability *goals* are set to inform capability requirements and major design tradeoffs needed to define the product being acquired. Once requirements and the product definition are firm (prior to Milestone B), affordability caps are established to provide fixed cost requirements that are functionally equivalent to Key Performance Parameters. Based on the Component's affordability analysis and recommendations, the MDA will set and enforce affordability constraints as follows:

(a) At MDD. Tentative affordability cost goals (e.g., total funding, annual funding profiles, unit procurement and/or sustainment costs, as appropriate) and inventory goals to help scope the AoA and provide targets around which to consider alternatives.

(b) At Milestone A. Affordability goals for unit procurement and sustainment costs.

(c) At the Development RFP Release Decision Point, Milestone B, and Beyond. Binding affordability caps.

(2) These constraints will be documented in the ADMs for these decision points. At Milestone B, the affordability caps will be documented in the program's APB. Any programs that do not include a Milestone B decision will receive goals or caps commensurate with their position in the acquisition cycle and their level of maturity.

(3) The metrics used for MDA-approved affordability constraints on procurement and sustainment costs may be tailored to the type of acquisition and the specific circumstances of a given program. In addition to capability requirements tradeoffs approved by the requirements validation authority; prudent investments in research, development, and test and evaluation; innovative acquisition strategies; and incentives to reduce costs can be used to ensure that affordability constraints are achieved.

f. Monitoring and Reporting. The MDA will enforce affordability constraints throughout the life cycle of the program. If a program manager concludes that, despite efforts to control costs and reduce requirements, an affordability constraint will be exceeded, then the Program Manager will notify the Component Acquisition Executive and the MDA to request assistance and resolution. Program managers will also report progress relative to affordability constraints at Defense Acquisition Executive Summary reviews.

4. LOWER ACAT PROGRAMS. Each Component Acquisition Executive will develop and issue similar guidance to ensure life-cycle affordability for lower ACAT programs that have resource implications beyond the FYDP.

ENCLOSURE 9

ANALYSIS OF ALTERNATIVES (AOA)

1. PURPOSE. The AoA assesses potential materiel solutions that could satisfy validated capability requirement(s) documented in the Initial Capabilities Document, and supports a decision on the most cost effective solution to meeting the validated capability requirement(s). In developing feasible alternatives, the AoA will identify a wide range of solutions that have a reasonable likelihood of providing the needed capability.

2. ANALYSIS OF ALTERNATIVES PROCEDURES

a. The Director of Cost Assessment and Program Evaluation (DCAPE) develops and approves study guidance for the AoA for potential and designated Acquisition Category (ACAT) I and IA programs and for each joint military or business requirement for which the Chairman of the Joint Requirements Oversight Council (JROC) or the Investment Review Board is the validation authority. In developing the guidance, the DCAPE solicits the advice of other DoD officials and ensures that the guidance requires, at a minimum:

(1) Full consideration of possible tradeoffs among life-cycle cost, schedule, and performance objectives (including mandatory key performance parameters) for each alternative considered.

(2) An assessment of whether the joint military requirement can be met in a manner consistent with the cost and schedule objectives recommended by the JROC or other requirements validation authority.

(3) Consideration of affordability analysis results and affordability goals if established by the MDA.

b. The DCAPE provides the AoA Study Guidance to the DoD Component or organization designated by the Milestone Decision Authority or, for ACAT IA programs, to the office of the principal staff assistant responsible for the mission area, prior to the Materiel Development Decision and in sufficient time to permit preparation of the study plan prior to the decision event. The study plan will be coordinated with the MDA and approved by the DCAPE prior to the Materiel Development Decision. The designated DoD Component or other organization or the principal staff assistant will designate responsibility for completion of the study plan and the AoA.

c. The final AoA will be provided to the DCAPE not later than 60 calendar days prior to the Milestone A review (or the next decision point or milestone as designated by the MDA). Not later than 15 business days prior to the Milestone A review, DCAPE evaluates the AoA and provides a memorandum to the MDA, with copies to the head of the DoD Component or other organization or principal staff assistant assessing whether the analysis was completed consistent

with DCAPE study guidance and the DCAPE-approved study plan. In the memorandum, the DCAPE assesses:

- (1) The extent to which the AoA:
  - (a) Examines sufficient feasible alternatives;
  - (b) Considers tradeoffs among cost, schedule, sustainment, and required capabilities for each alternative considered;
  - (c) Achieves the affordability goals established at Materiel Development Decision and with what risks.
  - (d) Uses sound methodology.
  - (e) Discusses key assumptions and variables and sensitivity to changes in these.
  - (f) Bases conclusions or recommendations, if any, on the results of the analysis.
  - (g) Considers the fully burdened cost of energy (FBCE) where FBCE is a discriminator among alternatives.

(2) Whether additional analysis is required.

(3) How the AoA results will be used to influence the direction of the program.

d. The final AoA will also be provided to and reviewed by the requirements validation authority prior to the Milestone A decision or the release of the request for proposals for the Technology Maturation and Risk Reduction Phase activities. The requirements validation authority will, at a minimum:

(1) Assess how well the recommended alternative satisfies validated requirements in the most cost effective manner for the warfighter.

(2) Identify any opportunities to adjust or align capability requirements for better synergy across the Joint Force capabilities.

(3) In accordance with the responsibilities identified in title 10 of U.S. Code (Reference (n)), offer alternative recommendations to best meet the validated capability requirements.

ENCLOSURE 10

COST ESTIMATING AND REPORTING

1. PURPOSE. This enclosure describes the primary tools and methods that the DoD uses to ensure that the most cost-effective solution to a validated capability need is chosen, budgets are adequate, and viable cost saving opportunities through multi-year contracting are exploited.

2. COST ESTIMATION

a. Per 10 U.S.C. 2334 (Reference (n)) and DoD Directive 5105.84 (Reference (bu)), the Director of Cost Assessment and Program Evaluation (DCAPE) provides policies and procedures for the conduct of cost estimates and cost analyses for all DoD acquisition programs, including issuance of guidance relating to program life-cycle cost estimation and risk analysis; reviews cost estimates and cost analyses conducted in connection with Major Defense Acquisition Programs (MDAPs) and Major Automated Information System (MAIS) programs; and leads the development of DoD cost community training. The procedures associated with these policies are detailed in DoD Manual 5000.4-M (Reference (ab)), DoD Manual 5000.04-M-1 (Reference (ay)), and the "Operating and Support Cost-Estimating Guide," (Reference (bv)).

(1) The DCAPE conducts Independent Cost Estimates (ICEs) and cost analyses for MDAPs for which the Under Secretary of Defense for Acquisition, Technology and Logistics (USD(AT&L)) is the Milestone Decision Authority (MDA) and as requested by the MDA for other MDAPs:

(a) In advance of any decision to enter LRIP or full-rate production.

(b) In advance of any certification pursuant to sections 2366a, 2366b, or 2433a of title 10 U.S.C. (Reference (n)).

(c) At any other time considered appropriate by the DCAPE or upon the request of the MDA.

(2) The DCAPE conducts ICEs and cost analyses for MAIS programs for which the USD(AT&L) is the MDA and as requested by the MDA for other MAIS programs in advance of:

(a) Any report pursuant to paragraph (f) of 10 U.S.C. 2445c (Reference (n)).

(b) At any other time considered appropriate by the DCAPE or upon the request of the MDA.

(3) The DCAPE prepares an ICE for Acquisition Category (ACAT) IC and IAC programs at any time considered appropriate by the DCAPE or upon the request of the USD(AT&L) or the MDA.

(4) For MDAPs for which DCAPE does not develop an ICE, the ICE supporting a milestone review decision will be provided to the MDA by the applicable Service Cost Agency or defense agency equivalent following review and concurrence by DCAPE.

(5) DCAPE representatives will meet with representatives from the Service Cost Agency and program office no later than 180 calendar days before the scheduled Development Request for Proposals (RFP) Release Decision Point to determine what cost analysis, if any, will be presented at the Decision Point Review and who will be responsible for preparing the cost analysis. Following the meeting, DCAPE will notify the MDA of the type of cost analysis that will be presented. The type of cost analysis will vary depending on the program and the information that is needed to support the decision to release the RFP. For some programs, no new cost analysis may be necessary, and the DCAPE representative will present the Milestone A ICE or an update to the Milestone A ICE. In other cases, the cost analysis may be a Cost Assessment and Affordability Analysis or a complete Independent Cost Estimate.

(6) The DCAPE reviews all cost estimates and cost analyses conducted in connection with MDAPs and MAIS programs, including estimates of operating and support (O&S) costs for all major weapon systems. To facilitate the review of cost estimates, the DCAPE receives the results of all cost estimates and cost analyses and associated studies conducted by the DoD Components for MDAPs and MAIS programs.

(7) The DCAPE, DoD Components, and Service Cost Agencies will be provided timely access to any records and data in the Department of Defense (including the records and data of each military department and defense agency, to include classified, unclassified, and proprietary information) it considers necessary to review cost analyses and conduct the ICEs and cost analyses described in sections 2 and 3 of this enclosure.

(8) For MDAP and MAIS programs, the DCAPE participates in the discussion of issues related to and/or differences between competing program cost estimates, comments on methodologies employed and the estimate preparation process, coordinates on the cost estimate used to support establishment of baselines and budgets, and participates in the consideration of any decision to request authorization of a multi-year procurement contract for an MDAP.

(9) The documentation of each MDAP or MAIS program cost estimate prepared by DCAPE and/or Service or Agency includes the elements of program cost risk identified and accounted for, how they were evaluated, and possible mitigation measures. DCAPE then assesses the proposed program's baseline and associated program budget's ability to provide the necessary high degree of confidence that the program can be completed without the need for significant adjustment to future program budgets. If the MDAP or MAIS program baseline or budget determined by DCAPE as appropriately high confidence is not adopted by the MDA, the MDA will document the rationale for the decision. For MDAPs, the next Selected Acquisition Report prepared in compliance with 10 U.S.C. 2432 (Reference (n)), and for MAIS programs, the next quarterly report prepared in compliance with 10 U.S.C. 2445c (Reference (n)) will disclose the confidence level used in establishing the cost estimate for the MDAP or MAIS program and the rationale for selecting the confidence level.

(10) In addition to O&S cost estimates included in the ICEs conducted at the reviews identified in paragraphs 2.a.(1) through 2.a.(4), Military Departments must update estimates of O&S costs periodically throughout the life cycle of a major weapon system to determine whether preliminary information and assumptions remain relevant and accurate and to identify and record reasons for variances. Further, an independent review of O&S cost estimates must be conducted at post-Initial Operational Capability reviews. Each O&S cost estimate must be compared to earlier cost estimates and the program's O&S affordability cap, and, as appropriate, this information will be used to update the life-cycle affordability analysis provided to the MDA and requirements validation authority. This comparison must identify the reasons for significant changes and categorize those reasons into external and internal factors.

b. The MDA may request that the DCAPE, within the DCAPE's discretion, develop cost assessments for any other program regardless of its acquisition category.

c. Per 10 U.S.C. 2434 (Reference (n)), the MDA may not approve the engineering and manufacturing development or the production and deployment of an MDAP unless an independent estimate of the full life-cycle cost of the program, prepared or approved by the DCAPE, has been considered by the MDA.

d. The DoD Component will develop a DoD Component Cost Estimate for all MDAPs prior to Milestone A, B, and C reviews and the Full Rate Production Decision, and for all MAIS programs at any time an Economic Analysis is due.

e. The DoD Component and the Service Cost Agency will establish a documented DoD Component Cost Position for all MDAPs and MAIS programs prior to the Milestone A, B, and C reviews, and the Full Rate Production Decision or Full Deployment Decision Review. The DoD Component Cost Position must be signed by the appropriate DoD Component Deputy Assistant Secretary for Cost and Economics (or defense agency equivalent) and must include a date of record.

f. At the Milestone A, B, and C reviews and for the Full Rate Production Decision or Full Deployment Decision review, the DoD Component must fully fund the program to the Component Cost Position in the current Future Years Defense Program (FYDP), or commit to full funding of the cost position in the next FYDP, with identification of specific offsets to address any funding shortfalls that may exist in the current FYDP. The Component Acquisition Executive and the DoD Component Chief Financial Officer must endorse and certify in the Full Funding Certification Memorandum that the FYDP fully funds, or will fully fund, the program consistent with the DoD Component Cost Position. If the program concept evolves after a milestone review, the Service Cost Agency may update the DoD Component Cost Position, and the DoD Component may fully fund the program in the FYDP to the updated DoD Component Cost Position.

3. COST ANALYSIS REQUIREMENTS DESCRIPTION (CARD). The foundation of a sound and credible cost estimate is a well-defined program. The DCAPE requires and provides guidance on the content and use of the CARD in DoD 5000.4-M (Reference (ab)) to provide that foundation. For ACAT I and IA programs, the Program Manager will prepare, and an authority

no lower than the DoD Component Program Executive Officer (PEO) will approve, the CARD. For joint programs, the CARD will cover the common program as agreed to by all participating DoD Components, as well as any DoD Component-unique requirements. The DCAPE and the organization preparing the DoD Component Cost Estimate must receive a draft CARD 180 calendar days, and the final CARD 45 calendar days, prior to a planned Overarching Integrated Product Team (OIPT) or equivalent staff coordination body review or DoD Component review, unless DCAPE agrees to other due dates. The Program Manager and PEO will insure the draft and final CARDS are consistent with other final program documentation.

a. Recognizing that program details are refined over time, with fewer details available for MDAPs and MAIS programs approaching Milestone A than Milestone B, DCAPE will provide CARD development guidance tailored to the specific review being conducted and the type of system being developed. However, all CARDS, no matter how tailored, will provide a program description that includes a summary of the acquisition approach, expected constraints, system characteristics, quantities, operational factors, operational support strategy, preliminary schedules, test programs, technology maturation and risk reduction plans, and appropriate system analogs. Additional content may be required as requested by DCAPE.

b. When Milestone A occurs prior to release of the Technology Maturation and Risk Reduction Phase RFP, the DCAPE or DCAPE-approved DoD Component ICE will not be able to reflect information provided by the competing contractors in their proposals. Should the contractor proposed solutions entering the Technology Maturation and Risk Reduction Phase differ significantly from the design reflected in the Milestone A CARD, the Program Manager will report any differences that might alter the basis for the MDA's Milestone A decision to DCAPE and the MDA. The MDA will determine whether an additional review is required prior to contract award.

c. At the Development RFP Release Decision Point, the program described in the final CARD will reflect the Program Manager's and PEO's best estimate of the materiel solution that will be pursued following Milestone B. The final CARD will be updated to reflect all new program information prior to Milestone B.

4. **COST REPORTING**. Standardized cost data collection procedures and formats are essential for credible cost estimates for current and future programs. DCAPE establishes procedural guidance for cost data collection and monitoring systems. Table 7 in Enclosure 1 of this instruction provides detailed information on Cost and Software Data Reporting (CSDR) requirements.

a. DoD has three primary cost data collection methods: CSDR, the Integrated Program Management Report, and the Visibility and Management of Operating and Support Costs (VAMOSC) systems. The CSDR and the Integrated Program Management Report instruments serve as the primary sources of acquisition cost data for major contracts and subcontracts associated with MDAPs and MAIS programs. DCAPE defines procedural and standard data formatting requirements for the CSDR system in DoD Manual 5000.04-M-1 (Reference (ay)). Formats and reporting requirements for Integrated Program Management Reports are determined

and managed by USD(AT&L). VAMOSOC data systems are managed by each Military Department and collect historical O&S costs for major fielded weapon systems. DCAPE conducts annual reviews of VAMOSOC systems to address data accessibility, completeness, timeliness, accuracy, and compliance with CAPE guidance. The annual reviews also assess the adequacy of each military department's funding and resources for its VAMOSOC systems. DoD Manual 5000.4-M (Reference (ab)) provides the procedural and data reporting requirements for VAMOSOC.

b. The two components of the CSDR system are Contractor Cost Data Reporting and Software Resources Data Reporting. CSDR plans are developed pursuant to the requirements in DoD Manual 5000.04-M-1 (Reference (ay)), and are required for each phase of program acquisition, including Technology Maturation and Risk Reduction, Engineering and Manufacturing Development, Production and Deployment, and Operations and Support. Proposed CSDR plan(s) for ACAT I and IA programs must be approved by DCAPE prior to the issuance of a contract solicitation. The DCAPE has the authority to waive the information requirements of Table 7. Program managers will use the CSDR system to report data on contractor costs and resource usage incurred in performing DoD programs.

c. In addition to the historic O&S cost data stored in VAMOSOC systems, each program must also retain and submit to CAPE, DoD Component and Service Cost Agency O&S cost estimates developed at any time during the life cycle of a major weapon system, together with copies of reports, briefings, and other supporting documentation that were used to prepare the cost estimates. This includes documentation used to prepare cost estimates for acquisition milestones or other program reviews, as well as O&S cost estimates incorporated into Selected Acquisition Reports.

5. DCAPE PROCEDURES. The DoD Component responsible for acquisition of a system will provide the cost, programmatic, and technical information required for estimating costs and appraising programmatic risks to DCAPE. The DoD Component will also facilitate DCAPE staff visits to the program office, product centers, test centers, and system contractor(s) as DCAPE deems necessary to support development of its cost estimate or assessment. The process through which the ICE is prepared will be consistent with the policies set forth in DoD 5000.4-M (Reference (ab)). The DCAPE's current policies and procedures are as follows, but may be modified by DCAPE according to program needs:

a. DCAPE representatives participate in integrated product team meetings (i.e., cost working-level integrated product teams).

b. The DCAPE, DoD Components, and Program Manager:

(1) Share data and models and use the same CARD.

(2) Raise and resolve issues in a timely manner and at the lowest possible level.

(3) Address differences between the ICE and the DoD Component cost estimate.

c. The Program Manager will identify issues projected to be brought to the OIPT to the DCAPE in a timely manner.

d. For a joint program, the lead DoD Component or executive agent will prepare the DoD Component Cost Estimate.

## 6. MULTIYEAR PROCUREMENT—COST ANALYSIS REQUIREMENTS

a. General. A multiyear procurement contract is a contract for the purchase of property for more than 1, but not more than 5, program years. Under 10 U.S.C. 2306b (Reference (n)), for multiyear contracts for defense acquisition programs that have specifically been authorized by law, the Secretary of Defense must certify in writing by March 1 of the year in which he or she requests legislative authority to enter into the multiyear contract that specified requirements will be met and must provide the basis for that determination to the congressional defense committees. A part of those conditions specified in section 2306b are:

(1) The use of such a contract will result in substantial savings of the total anticipated costs of carrying out the program through annual contracts.

(2) The minimum need for the property to be purchased is expected to remain substantially unchanged during the contemplated contract period in terms of production rate, procurement rate, and total quantities.

(3) There is a reasonable expectation that throughout the contemplated contract period the head of the agency will request funding for the contract at the level required to avoid contract cancellation.

(4) There is a stable design for the property to be acquired and the technical risks associated with such property are not excessive.

(5) The estimates of both the cost of the contract and the anticipated cost avoidance through the use of a multiyear contract are realistic.

(6) The use of such a contract will promote the national security of the United States.

b. CAPE Role and Requirements. Prior to the Secretary's determination under subsection (a), DCAPE is required to complete a cost analysis and determine such analysis supports the Secretary's findings above. In order for DCAPE to complete the cost analysis in a timely manner, the agency head must submit a list of multiyear procurement contract candidates and supporting information to DCAPE no later than October 1 of the fiscal year prior to the fiscal year in which the request for legislative authority, with accompanying certification, will be made.

c. Additional Requirements. Section 2306b sets forth several other requirements for multiyear contracts. Prior to requesting authority to enter into a multiyear contract, the program manager should consult with his or her agency's counsel to confirm that the proposed multiyear contract complies with all relevant statutes and regulations.

ENCLOSURE 11

REQUIREMENTS APPLICABLE TO ALL PROGRAMS CONTAINING  
INFORMATION TECHNOLOGY (IT)

1. PURPOSE. This enclosure identifies the additional policies and procedures that apply to all programs containing IT.

2. APPLICABILITY. This enclosure applies to:

a. IT, as defined in title 40 of U.S. Code (Reference (q)), is any equipment or interconnected system or subsystem of equipment, used in the automatic acquisition, storage, analysis, evaluation, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information; includes computers, ancillary equipment (including imaging peripherals, input, output, and storage devices necessary for security and surveillance), peripheral equipment designed to be controlled by the central processing unit of a computer, software, firmware and similar procedures, services (including support services, and related resources). IT is equipment used by the DoD directly or is used by a contractor under a contract with the DoD that requires the use of that equipment. IT does not include any equipment acquired by a federal contractor incidental to a federal contract.

b. National security systems (NSS), as defined in the Federal Information Security Management Act of 2002, 44 U.S.C. 3541, et seq. (Reference (bb)), are telecommunications or information systems operated by or on behalf of the Federal 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 weapons system, or, is critical to the direct fulfillment of military or intelligence missions. NSS do not include systems that are used for routine administrative and business applications (including payroll, finance, and personnel management applications).

c. Information systems, as defined in title 44 of U.S. Code (Reference (bb)), are a discrete set of information resources organized for the collection, processing, maintenance, use, sharing, dissemination, or disposition of information.

3. CLINGER-COHEN ACT (CCA) COMPLIANCE. Subtitle III of title 40 of U.S. Code (Reference (q)) (formerly known as Division E of CCA) (hereinafter referred to as "CCA") applies to all IT investments, including NSS.

a. For all programs that acquire IT, including NSS, at any acquisition category (ACAT) level, the Milestone Decision Authority (MDA) will not initiate a program nor an increment of a program, or approve entry into any phase of the acquisition process that requires formal acquisition milestone approval, and the DoD Component will not award a contract for the applicable acquisition phase until:

(1) The sponsoring DoD Component or program manager has satisfied the applicable requirements of the CCA as shown in Table 9 in Enclosure 1 of this instruction; and

(2) The DoD Component Chief information Officer (CIO), or their designee, confirms compliance with the CCA.

b. The DoD Component CIO, or their designee, will document the CCA compliance confirmations in the DoD Information Technology Portfolio Repository upon program initiation, and in the Acquisition Information Repository, as required.

c. Table 9 in Enclosure 1 of this instruction identifies the specific requirements for CCA compliance. These requirements will be satisfied to the maximum extent practicable through documentation developed under the Joint Capabilities Integration and Development System and the Defense Acquisition System. The Program Manager will prepare a table similar to Table 9 to indicate which documents demonstrate compliance with the CCA requirements. DoD Component CIOs, or their designee, will use the documents cited in the table prepared by the Program Manager to assess and confirm CCA compliance. Additional guidance is available in the Defense Acquisition Guidebook (Reference (1)).

4. POST IMPLEMENTATION REVIEW (PIR). The Functional Sponsor, in coordination with the DoD Component CIO and Program Manager, is responsible for developing a plan and conducting a PIR for all fully deployed IT, including NSS. PIRs will report the degree to which doctrine, organization, training, materiel, leadership and education, personnel, facilities, and policy changes have achieved the established measures of effectiveness for the desired capability; evaluate systems to ensure positive return on investment and decide whether continuation, modification, or termination of the systems is necessary to meet mission requirements; and document lessons learned from the PIR. If the PIR overlaps with Follow-on Operational Test and Evaluation, the sponsor should coordinate planning of both events for efficiency. The preparation of the TEMP and the MDA's decision to proceed with full-rate production satisfy the requirement for weapons systems. The post fielding assessment(s), the disposition assessment, and the disposition decision for an urgent need (as described in Enclosure 13), meet the requirement for a PIR.

5. DOD INFORMATION ENTERPRISE ARCHITECTURE. The DoD Information Enterprise Architecture will underpin all information architecture development to realize the Joint Information Environment. Program Managers must develop solution architectures that comply with the DoD Information Enterprise Architecture, applicable Mission Area and Component architectures, and DoD Component architecture guidance. A program's solution architecture should define capability and interoperability requirements, establish and enforce standards, and guide security and cybersecurity requirements. The standards used to form the Standard Viewpoints of integrated architectures will be selected from those contained in the current approved version of the DoD IT Standards Registry within the Global Information Grid Technical Guidance Federation service (Reference (bw)). The IT will be tested to measures of performance derived from the solution architecture.

## 6. CYBERSECURITY

a. Cybersecurity Risk Management Framework (RMF). Cybersecurity RMF steps and activities, as described in DoD Instruction 8510.01 (Reference (bx)), should be initiated as early as possible and fully integrated into the DoD acquisition process including requirements management, system engineering, and test and evaluation. Integration of the RMF in acquisition processes reduces required effort to achieve authorization to operate and subsequent management of security controls throughout the system life cycle.

b. Cybersecurity Strategy. All acquisitions of systems containing IT, including NSS, will have a Cybersecurity Strategy. Beginning at Milestone A, the Program Manager will submit the Cybersecurity Strategy to the cognizant DoD Component CIO for review and approval prior to milestone decisions or contract awards (section 811 of P.L. 106-398 (Reference (r))).

(1) For ACAT ID, IAM, and IAC programs, the DoD CIO will review and approve the Cybersecurity Strategy prior to milestone decisions or contract awards.

(2) CIOs will document the results of all reviews.

(3) If contract award is authorized as part of an acquisition milestone decision, a separate review of the Cybersecurity Strategy prior to contract award is not required.

(4) Consistent with section 13 in Enclosure 3 and the Program Protection Plan outline available at [https://dap.dau.mil/policy/Lists/Policy%20Documents/Attachments/3298/PPP\\_Outline\\_and\\_Guidance\\_FINAL.DOCX](https://dap.dau.mil/policy/Lists/Policy%20Documents/Attachments/3298/PPP_Outline_and_Guidance_FINAL.DOCX), the approved Cybersecurity Strategy will be an appendix to the Program Protection Plan.

7. TRUSTED SYSTEMS AND NETWORKS. Program managers of NSS, Mission Assurance Category I systems, or other DoD information systems that the Component Acquisition Executive or Component CIO determines to be critical to the direct fulfillment of military or intelligence missions must identify and protect mission critical functions and components (required by DoD Instruction 5200.44 (Reference (ar))). Trusted Systems and Networks plans and implementation activities are documented in Program Protection Plans and relevant cybersecurity plans and documentation (see section 13 in Enclosure 3 for additional details). TSN risk is managed by:

a. Conducting a criticality analysis to identify mission critical functions and critical components and reducing the vulnerability of such functions and components through secure system design.

b. Requesting threat analysis of suppliers of critical components (Supplier All Source Threat Analysis).

c. Engaging the pertinent Trusted Systems and Networks focal point for guidance on managing identified risk.

d. Applying Trusted Systems and Networks best practices, processes, techniques, and procurement tools prior to the acquisition of critical components or their integration into applicable systems.

**8. LIMITED DEPLOYMENT FOR A MAJOR AUTOMATED INFORMATION SYSTEM (MAIS) PROGRAM.**

At Milestone C, the MDA for a MAIS program will approve, in coordination with the Director, Operational Test & Evaluation, the quantity and location of sites for a limited deployment of the system for Initial Operational Test and Evaluation. MDAs may also make this determination at Milestone B for incrementally fielded programs, consistent with the procedures in paragraph 5.c.(3)(d) in the core instruction.

**9. CLOUD COMPUTING.** Defense Information Systems Agency (DISA) is designated as the DoD Enterprise Cloud Service Broker to manage the mission assurance, cybersecurity, and other IT requirements for DoD data and information provided by external cloud service providers. All requests for the acquisition and use of externally provided cloud computing services must be made through DISA as the DoD Enterprise Cloud Service Broker. Program managers report the use of cloud computing through the submission of the Office of Management of Budget Exhibit 53 (Reference (c)).

**10. DOD ENTERPRISE SOFTWARE INITIATIVE.** When acquiring commercial IT, Program Managers must consider the DoD Enterprise Software Initiative (DoD ESI), Federal Strategic Sourcing Initiative procurement vehicles, and Defense Component level Enterprise Software Licenses. The Defense Federal Acquisition Supplement (DFARS) subpart 208.74 (Reference (at)) and Office of Management and Budget Policy Memorandums M-03-14, M-04-08, M-04-16 and M-05-25 (References (by) through (cb)) and the DoD ESI web site at <http://www.esi.mil/> provide additional detail.

**11. DOD DATA CENTER CONSOLIDATION.** Any Program Manager who intends to obligate funds for data servers, data centers, or the information systems technology used therein, must obtain prior approval from the DoD CIO. The request must be signed by the Component CIO and include a completed request for the Authorization of Funds for Data Centers and Data Server Farms in accordance with section 2867 of P.L. 112-81 (Reference (aa)). Detailed implementation guidance is available in the Defense Acquisition Guidebook (Reference (I)).

**12. IT, INCLUDING NSS, INTEROPERABILITY.** To achieve the information superiority and interoperability goals of DoD Directive 5000.01 (Reference (a)), program managers will design, develop, test and evaluate systems to ensure IT interoperability requirements are achieved. At key decision points and acquisition milestones, interdependencies, dependencies, and synchronization with complementary systems must be addressed. The Program Manager will ensure that interoperability certification is achieved in accordance with DoD Instruction 4630.8 (Reference (aj)).

13. DATA PROTECTION. Program managers of DoD IT systems (including those supported through contracts with external sources) that collect, maintain, use, or disseminate data must protect against disclosure to non-approved sources while meeting the organization's record keeping needs.

a. Personally Identifiable Information must be managed in a manner that protects privacy, in accordance with 5 U.S.C. 552a (Reference (cc)). DoD Instruction 5400.16 (Reference (cd)) established the guidance for the development, review, and approval of Privacy Impact Assessments, in accordance with Chapter 36 of title 44 of U.S.Code (Reference (bb)).

b. Scientific and technical information must be managed to make scientific knowledge and technological innovations fully accessible to the research community, industry, the military operational community, and the general public within the boundaries of law, regulation, other directives, and executive requirements, in accordance with DoD Instruction 3200.12 (Reference (ce)).

c. Program managers will comply with record-keeping responsibilities under the Federal Records Act for the information collected and retained in the form of electronic records (see DoD Instruction 5015.02 (Reference (bh)) for additional information on the DoD Records Management Program). Electronic record-keeping systems must preserve the information submitted, as required by 44 U.S.C. 3101 (Reference (bb)) and implementing regulations. Program managers shall develop data archiving plans that delineate how records are collected, created, and stored within their systems. These plans shall include processes for disposition of both temporary and permanent records. Program managers should work with Component records managers early and throughout the acquisition process.

14. SECTION 508 - ACCESSIBILITY OF ELECTRONIC AND INFORMATION TECHNOLOGY (E&IT) FOR INDIVIDUALS WITH DISABILITIES. Program managers will ensure that E&IT developed, procured, maintained, and used by the DoD will allow persons with disabilities access to information comparable to that afforded persons without disabilities, in accordance with section 508 of the Rehabilitation Act (i.e., 29 U.S.C. 794d (Reference (cf))). For exceptions to section 508 compliance, refer to DoD Manual 8400.01-M (Reference (cg)).

ENCLOSURE 12

DEFENSE BUSINESS SYSTEMS (DBS)

1. PURPOSE. This enclosure provides additional policy applicable to the acquisition of defense business systems that are expected to have a life-cycle cost in excess of \$1 million. It is intended to be used in conjunction with the procedures in the core instruction, with statutorily specified governance, distinctive documentation as noted in Enclosure 1, and augmented review requirements.

2. DBS. A DBS is an information system, other than a National Security System, operated by, for, or on behalf of the DoD, including financial systems, management information systems, financial data feeder systems, and the information technology and cybersecurity infrastructure used to support business activities, such as contracting, pay and personnel management systems, some logistics systems, financial planning and budgeting, installations management, and human resource management.

3. DBS GOVERNANCE

a. Defense Business Systems Management Committee (DBSMC), chaired by the Deputy Secretary of Defense, recommends policy and procedure to improve the acquisition of DBS. The DBSMC is the approval authority for all statutorily required DBS certifications and will document such decisions. A DBSMC certification approval is required prior to any obligation of funds for acquisition. Programs must be re-certified at least annually. The Milestone Decision Authority (MDA) [when at the OSD or Military Department level] will serve as a member of the DBSMC.

b. Investment Review Board (IRB)

(1) The IRB will be established by the Deputy Chief Management Officer and chaired as directed by the Deputy Secretary. The IRB serves as an advisory body to the chair and will assist the chair in:

(a) Prioritizing DoD enterprise business system capability requirements and providing oversight of processes and procedures for business systems that support defense business operations and enable end-to-end process optimization.

(b) Reviewing problem statements (approved by the IRB Chair) and investment certification requests (that are certified by the IRB Chair who recommends approval to the DBSMC), capability requirements and technical configuration changes that have the potential to impact cost and schedule for programs in development, and business cases.

(2) For DBS for which the MDA is at the DoD level, the IRB Chair will serve as a member of the Defense Acquisition Board.

c. Functional sponsors are the OSD or DoD Component executives responsible for:

- (1) Representing user community interests.
- (2) Ensuring DBS investments are funded.
- (3) Defining management capability.
- (4) Ensuring business process re-engineering is performed.
- (5) Verifying that capability requirements are met for Initial Operational Capability (IOC).

(6) Developing the Problem Statement and the non-materiel portions of the Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities, and Policy (DOTMLPF-P) solution.

(7) Working with the Program Manager to develop the Business Case, accomplish effective business process re-engineering, and implement the DOTMLPF-P solution.

d. DoD Component Pre-Certification Authorities for DBSs are a military Department Chief Management Officer, a Defense Agency Director, or a designee approved by the DoD Deputy Chief Management Officer. Prior to any milestone decision, the DoD Component Pre-Certification Authority must determine that:

- (1) The DBS is in compliance with the enterprise architecture.
- (2) The business process supported by the DBS is or will be as streamlined and efficient as practicable.
- (3) The need to tailor commercial-off-the-shelf systems to meet or incorporate unique requirements or unique interfaces has been eliminated or reduced to the extent practical.
- (4) The DBS is necessary to:
  - (a) Achieve a critical national security capability, or address a critical requirement in an area such as safety or security; or
  - (b) Prevent a significant adverse effect on a project that is needed to achieve an essential capability, taking into consideration the alternative solutions for preventing such adverse effect.

(5) The Pre-Certification authority's determination will be documented in a memo and provided to the IRB as part of the certification review. The DBSMC must approve the IRB Certification prior to any action that would result in the obligation of funds.

#### 4. DBS PHASE REQUIREMENTS

a. Business Capabilities Requirements Development. DBSs generally do not employ Joint Capabilities Integration and Development System (JCIDS) procedures for the development and validation of capability requirements documents. Consequently, the activities performed and the documentation required in the DBS Problem Statement will be used in lieu of JCIDS. Business capability definition precedes the Materiel Development Decision (MDD), and is designed to assess the business problem, identify required business process re-engineering, and inform development of the Problem Statement.

##### (1) Business Capability Definition

(a) Purpose. Business capability definition precedes the MDD decision point. The purpose of business capability definition is to analyze a perceived business problem, capability gap, or opportunity (subsequently referred to as "business need"), and to document the results in a Problem Statement supported by measurable business outcomes. The Problem Statement will be used as the capability requirements document for DBS, and will inform future analysis and decision making. The DBS Problem Statement must be prepared and reviewed by the IRB prior to the MDD. It should be approved by the IRB Chair and provided to the MDA 30 calendar days prior to the MDD.

##### (b) Problem Statement Preparation

1. The Functional Sponsor conducts foundational analysis to assess the business need and identify the root cause(s) of the problem; bound the need within its functional context; describe the DOTMLPF-P impacts; and describe the desired high-level outcomes and their associated metrics.

2. Initial business process re-engineering will be conducted to describe the optimal "to-be" business process on which solution analysis will be evaluated during the analysis of alternatives.

3. Analytical results, along with a rough order of magnitude cost estimate, are summarized in the Problem Statement and forwarded to the IRB for review. The completed Problem Statement provides the underpinning for the analysis of alternatives.

(c) Problem Statement Review. The Functional Sponsor prepares the Problem Statement for IRB Chair review and approval prior to submission to the MDA in support of the MDD. For materiel solutions that are expected to meet or exceed the Major Automated Information System (MAIS) program threshold, the Functional Sponsor will submit all information required for an MDD to the IRB Chair 30 calendar days prior to the MDD.

(d) The Joint Requirements Oversight Council (JROC), on advice of the JCIDS gatekeeper and the Functional Capabilities Board, will have authority to review Problem Statements to determine if JROC interest exists, as designated by the Chairman of the Joint Chiefs of Staff Instruction 3170.01H (Reference (j)).

(2) DBS will enter the acquisition process at MDD and follow the procedures described in paragraph 5.d of the core instruction. At the MDD, the MDA, may, based on early program analysis, accelerate program development activity. Associated actions may include an abbreviated analysis of alternatives, rapid assignment of a program manager, designation of an advanced entry decision point or milestone, and immediate initiation of the preparation of the Business Case that will be used to support subsequent milestones and decision points.

b. Full Deployment. When an increment is fully deployed, the Program Manager will schedule a close-out review with the MDA and the IRB to determine whether the investment has achieved the outcomes defined in the Business Case.

## 5. DBS DOCUMENTATION AND REVIEW REQUIREMENTS

### a. Documentation

#### (1) Business Case

(a) The Business Case is a brief, high-level document that describes the program and associated planning. The Business Case will also include the Problem Statement and the IRB Chair-validated requirement, and summarizes the DOTMLPF-P solution for a point in time.

(b) Program documentation supports the Business Case. Applicable statutorily required program documents will be used to support the Business Case. Regulatory information requirements will, with MDA approval, be tailored consistent with the characteristics of the DBS program. Program information, as specified in Enclosure 1 of this instruction, will be prepared by the program office and may be summarized or referenced in the Business Case to reduce redundancy and eliminate unnecessary overhead.

(c) The Business Case is co-developed and updated by the Functional Sponsor and the Program Manager, and is required for all milestone decisions. The Business Case is approved by the MDA at each milestone or relevant decision point.

(2) Program Charter. The Component Acquisition Executive (CAE), or designee for below MAIS level programs, approves the Program Charter that establishes the roles and responsibilities of those involved in planning and executing the program, and the managerial methods for developing and delivering the materiel solution described in the Business Case.

(3) DBSMC Certification Approval Memorandum. A DBSMC certification approval memorandum is required prior to the obligation of DBS program funds. The “Defense Business

Systems Investment Management Process Guidance” (Reference (ch)) provides additional detail on the process, roles and responsibilities, and documentation requirements for certifications in accordance with 10 U.S.C. 2222 (Reference (n)).

b. Milestone and Decision Point Review Requirements

(1) The Functional Sponsor will review the threshold capability requirements in the Business Case and, if refinement is required, propose changes to the requirements validation authority for approval prior to the Milestone or Decision Point.

(2) The IRB Chair will ensure that the business need and recommended solution are consistent with portfolio priorities and verify Business Enterprise Architecture compliance.

(3) The Heads of the DoD Components will provide oversight of DBS programs that do not meet the MAIS thresholds in Table 1 and are not expected to exceed those thresholds and have not been designated as special interest or Pre-MAIS. The acquisition processes and procedures for such programs will be consistent with applicable statute, regulation, and this instruction.

(4) The CAE, when the MDA is at OSD, will:

(a) Sign the Business Case.

(b) Provide the MDA with a written statement (CAE Compliance Memorandum) that the preferred materiel solution is compliant with all applicable statutes and regulations.

(c) Describe any issues applicable to the milestone or decision with recommended resolution.

(5) The MDA will consider directing an independent risk assessment to be performed prior to Milestone A and/or the Development Request for Proposals (RFP) Release Decision Point. The results of the assessment, if conducted, will be provided to the IRB Chair and the MDA. For DBS that do not meet the MAIS program threshold, the CAE will be responsible for establishing procedures to independently assess risk.

(6) Prior to approving Milestone A or entering development for a DBS, the MDA must determine that the program will achieve IOC within 5 years (section 811 of P.L. 109-364, Reference (x)).

(7) Prior to the Development RFP Release Decision Point, the Functional Sponsor will define what constitutes IOC for the increment. IOC is the initial point in time when a fully trained and supported user organization of a specified size is equipped with a capability achieving the performance thresholds documented in the Business Case and Acquisition Program Baseline.

ENCLOSURE 13

RAPID ACQUISITION OF URGENT NEEDS

1. PURPOSE. This enclosure provides policy and procedures for acquisition programs that provide capabilities to fulfill urgent needs that can be fielded in less than 2 years and which are below the cost thresholds of Acquisition Category (ACAT) I and IA programs.

2. URGENT NEEDS

a. DoD's highest priority is to provide warfighters involved in conflict or preparing for imminent contingency operations with the capabilities urgently needed to overcome unforeseen threats, achieve mission success, and reduce risk of casualties, as described in DoD Directive 5000.71 (Reference (ci)). The objective for the rapid acquisition of urgent needs is to deliver capability quickly, within days or months. DoD Components will use all available authorities to expeditiously fund, develop, assess, produce, deploy, and sustain urgent need capabilities for the duration of the urgent need, as determined by the requesting DoD Component.

b. Approval authorities for each type of urgent need will be delegated to a level that promotes rapid action. This enclosure applies to the following types of urgent needs:

(1) A validated Urgent Operational Need (UON). UONs include:

(a) Joint Urgent Operational Needs (JUONs) and Joint Emergent Operational Needs (JEONs). For JUONs and JEONs, the validation approval will be by the Joint Staff in accordance with Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3170.01H (Reference (j)). Program execution for JUONs and JEONs will be assigned in accordance with DoD Directive 5000.71 (Reference (ci)). The Milestone Decision Authority (MDA), for JUONs and JEONs will be determined at the DoD Component level except in very rare cases when the MDA will be designated in an Acquisition Decision Memorandum (ADM) by the Defense Acquisition Executive (DAE).

(b) DoD Component-specific UONs, as defined in CJCSI 3170.01H and further discussed in DoD Directive 5000.71. Approval authorities for DoD Component UONs, including their validation, program execution, and the designation of the MDA will be at the DoD Component level.

(2) Critical warfighter issues identified by the Warfighter Senior Integration Group (SIG) in accordance with DoD Directive 5000.71, hereafter referred to as Warfighter SIG urgent needs. The Chairman of the Warfighter SIG will approve the urgent need and provide instructions to DoD Component(s) on program execution and management.

(3) A Secretary of Defense Rapid Acquisition Authority (RAA) Determination, in accordance with section 806(c) of P.L. 107-314 (Reference (p)). Secretary of Defense RAA

Determinations task a DoD Component to fulfill the urgent need and will be handled in accordance with DoD Directive 5000.71 (Reference (ci)). The MDA for RAA Determinations will be designated at the DoD Component level except in very rare cases when the MDA will be designated in an ADM by the DAE.

c. DoD Components will designate a single official responsible for DoD Component UON validation and nomination to the Component Acquisition Executive (CAE) for execution as an urgent need, as defined in CJCSI 3170.01H (Reference (j)). UONs will be validated in accordance with procedures established by the Chairman of the Joint Chief of Staff for JUONs and JEONs in CJCSI 3170.01H or the DoD Component for Component UONs.

d. MDAs and program managers will tailor and streamline program strategies and oversight. This includes program information, acquisition activity, and the timing and scope of decision reviews and decision levels. Tailoring and streamlining should be based on program complexity and the required timelines to meet urgent need capability requirements consistent with applicable laws and regulations.

e. DoD Components will employ, to the extent possible, parallel rather than sequential processes to identify and refine capability requirements, identify resources, and execute acquisitions to expedite delivery of solutions. Formal milestone events may not be required. Acquisition decision making and associated activity will be tailored to expedite acquisition of the capability. Development will generally be limited and the MDA can authorize production at the same time development is approved.

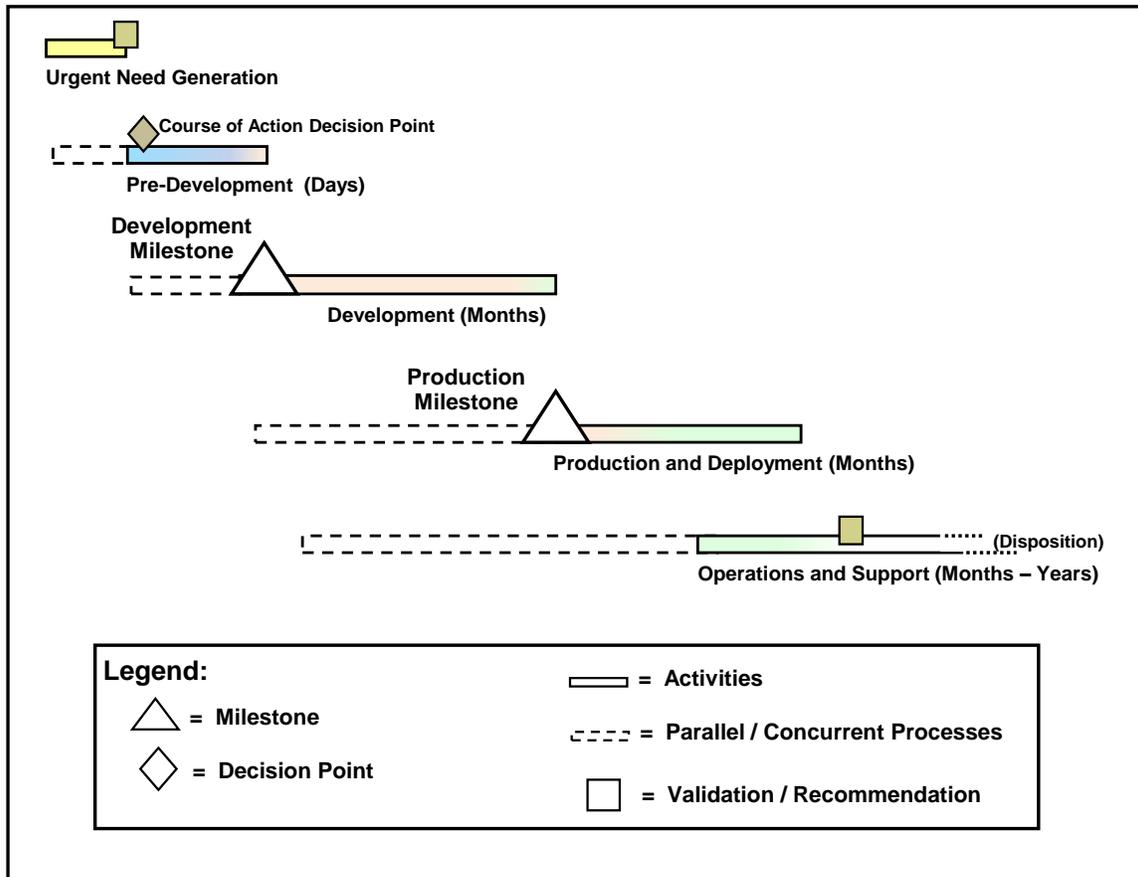
f. DoD Components will ensure that financial, contracting, and other support organizations (e.g., Defense Contract Audit Agency, Defense Contract Management Agency, General Counsel) and prime and sub-tier contractors involved with aspects of the urgent need acquisition program are fully aware of the urgency of the need and will ensure expedited action.

g. Generally, funds will have to be reprioritized and/or reprogrammed to meet urgent needs and to expedite the acquisition process. If a need can be satisfied within an acceptable timeline through the normal Planning, Programming, Budgeting, and Execution System, it would not be considered appropriate for rapid acquisition.

h. Consistent with the emphasis on urgency, if the desired capability cannot be delivered within 2 years of identification of the urgent need, the MDA will assess the suitability of partial or interim capabilities that can be fielded more rapidly. In those cases, the actions necessary to develop the desired solution may be initiated concurrent with the fielding of the interim solution. Warfighter SIG urgent needs or Secretary of Defense RAA determinations will be addressed as determined by the Chairman, Warfighter SIG, or by the official designated for action in the Secretary of Defense RAA Determination.

3. RAPID ACQUISITION ACTIVITIES. The following paragraphs describe the main activities associated with the Rapid Acquisition of Urgent Needs: Pre-Development, Development, Production, and Operations and Support. The activities detailed in this enclosure are not separate from or in addition to activities performed as part of the acquisition system but are a highly tailored version of those activities and are intended to expedite urgent needs by tailoring the documentation and reviews normally required as part of the deliberate acquisition process. Figure 10 depicts a representative urgent need acquisition.

Figure 10. Rapid Acquisition of Urgent Needs



a. Pre-Development

(1) Purpose. The purpose of Pre-Development is to assess and select a course or courses of action to resolve an urgent need and develop an acquisition approach.

(2) Initiation. Pre-Development initiation requires approval of an urgent need statement: a validated UON, Warfighter SIG urgent need statement or a Secretary of Defense RAA determination document.

(3) Pre-Development Activities

(a) A validated UON statement, approved Warfighter SIG urgent need statement, or the Secretary of Defense RAA Determination serves as the validated or approved requirements document until such time as the disposition action discussed in paragraph 3.f.(5) of this enclosure is complete.

(b) Upon receipt of an approved urgent need, the designated CAE will immediately appoint a Program Manager and an MDA. If the DAE has retained MDA authority, he or she will either appoint a Program Manager or task a CAE to do so.

(c) The Program Manager in collaboration with the intended user:

1. Reviews the urgent need requirement and any recommended non-materiel options and, if not adequately stated in the validated UON, the RAA Determination, or SIG designated issue, will determine the performance thresholds for the minimal set of performance parameters required to mitigate the capability gap.

2. Performs an analysis of potential courses of action (COAs) that consider:

a. The range of feasible capabilities, to include consideration of an existing domestic or foreign-made system.

b. The acquisition risk (cost, schedule, and performance) and the operational risk of each solution.

c. The operational risk to the requesting Commander if an effective solution is not deployed by the time specified in the urgent need.

d. Multiple, simultaneous, near, mid, and/or long term capabilities to fulfill the urgent need.

3. Develops a recommended COA for review by the MDA.

4. If the Program Manager is unable to identify an effective solution, the Program Manager will notify the MDA. The MDA will in turn notify the DoD Component validation authority. If it is a JUON or JEON, a Warfighter SIG urgent need, or a Secretary of Defense RAA Determination, the MDA will notify the DAE and the Deputy Director of Requirements, Joint Staff, through the Director, Joint Rapid Acquisition Cell.

(d) The Program Manager will present the recommended COA(s) to the MDA for a COA selection. Once the MDA selects the COA(s), this decision will be documented in an ADM. More than one COA may be selected by the MDA to provide the phased or incremental fielding of capabilities.

(e) Following the selection of the COA(s) by the MDA, the Program Manager will develop a complete acquisition approach (or acquisition approaches if more than one COA has

been approved by the MDA), and an abbreviated program baseline (or baselines for multiple COAs) based on readily available information.

(f) The acquisition approach will comply with statutory requirements in Table 10 and specified items in Table 2 of Enclosure 1; however, a streamlined, highly tailored approach consistent with the urgency of the need will be employed. Regulatory requirements will be tailored or waived. The tailored Acquisition Strategy should be relatively brief and contain only essential information to the extent possible, such as resourcing needs and sources, key deliverables, performance parameters, a production schedule, a contracting methodology and key terms, preliminary plans for Assessment (which may or may not include test and evaluation), deployment, training, and sustainment. Information technology (IT) and National Security Systems (NSS) provided in response to an urgent need do require an Authority to Operate or an Interim Authority to Operate in accordance with DoD Instruction 8510.01 (Reference (bx)). A disposition decision should be made as early as feasible and decided upon at appropriate milestones or other decision points.

(g) Funding for urgent needs may be in increments over the urgent need's lifecycle. The urgent need life-cycle begins upon the receipt of an urgent need and ends upon completing the final disposition of the capability provided in response to the urgent need as described in the Operations and Support portion of this enclosure.

(h) When designing the acquisition approach, the Program Manager, in collaboration with the requesting operational commander or sponsoring user representative will determine whether an operational prototype is necessary.

(i) If the program has been placed on Director, Operational Test and Evaluation, (DOT&E) oversight, a plan for operational testing must be approved by the DOT&E. DOT&E will report the results of required testing to the Secretary of Defense and provide copies to Congress and the MDA

b. Development Milestone. Entry into Development is approved by the MDA.

(1) The Program Manager will present the acquisition approach to include the program requirements, schedule, activities, program funding, and the Assessment Approach and intermediate decision points and criteria.

(2) The MDA will:

(a) Determine the feasibility of resolving the urgent need within the required timelines to include consideration of the technical maturity of the preferred solution(s).

(b) Review the acquisition approach and determine whether the preferred solution(s):

1. Can be fielded within 2 years.

2. Does not require substantial development effort.

3. Is based on technologies that are proven and available.

4. Can be acquired under fixed price.

(c) Provide any exceptions necessary pursuant to section 804 (b)(3) of P.L. 111-383 (Reference (z)), including exceptions to the requirements of paragraphs 3.b.(2)(b)1 through 3.b.(2)(b)4.

(d) Approve initial quantities to be produced and assessed (to include required assessment and training articles).

(e) Approve a tailored Acquisition Strategy and Acquisition Program Baseline. These documents will be based on readily available information and will mature over time into a more robust plan.

(f) Decide if RAA, in accordance with section 806(c) of P.L. 107-314 (Reference (p)), should be requested from the Secretary of Defense to expedite the urgent need's resolution.

(g) In collaboration with the supporting operational test organization, approve a highly tailored and abbreviated Test and Evaluation Master Plan (TEMP). The TEMP will describe a performance Assessment plan that will include schedule, test types and environment, and assets required. If the defense rapid acquisition program is on DOT&E oversight, the Program Manager must then prepare a combined operational and live fire test plan for DOT&E approval.

(h) Approve any waivers to statute (if permitted by statute) or regulation. Specify any additional authority the Program Manager may use to modify the acquisition approach without the specific approval of the MDA.

(i) Authorize release of the request for proposals and related documents for development and any other MDA approved actions.

(j) Document these decisions in an ADM.

c. Development Activities

(1) Development includes an Assessment of the performance, safety, suitability, and survivability of the capability, but does not require that all identified deficiencies including those related to safety be resolved prior to production or deployment. The MDA will, in consultation with the user, determine which deficiencies must be resolved and what risks can be accepted.

(2) IT and NSS provided in response to an urgent need require an Authority to Operate or an Interim Authority to Operate (DoD Instruction 8510.01 (Reference (bx))). DoD Component Chief Information Officers will establish processes consistent with DoD Instruction 8510.01 for

designated approval authorities to expeditiously make the certification determinations and to issue Interim Authorization to Test, Authority to Operate, or Interim Authority to Operate.

d. Production Milestone

(1) Entry into Production and Deployment is approved by the MDA.

(2) At the Production Milestone review:

(a) The Program Manager will summarize the results of Development activity and the program Assessment. The Program Manager will present plans to transport, deploy, and sustain the capability; to conduct Post-Fielding Assessments; and to train maintenance and operating personnel. This information will be provided to the MDA for approval.

(b) The MDA, in consultation with the supporting operational test organization, and with the approval of DOT&E for programs on DOT&E oversight, will determine when Post-fielding Assessments are required, whether the urgent need solution has been adequately reviewed, performs satisfactorily, is supportable, and is ready for production and deployment.

(c) The MDA decides whether to produce and deploy the system, approves the updated acquisition approach (which will include the sustainment plan), and documents the Production Decision in an ADM. This decision should be coordinated, when feasible, with the intended user.

e. Production and Deployment Activities

(1) During Production and Deployment the acquiring organization provides the warfighter with a capability that satisfies the urgent need to include any required training, spares, technical data, computer software, support equipment, maintenance, or other logistics support necessary for operation.

(a) DoD Components will ensure urgent need acquisition program capabilities and required support (e.g., field service representatives, training) are deployed by the most expeditious means possible and tracked through to their actual delivery to the user.

(b) The DoD Components will coordinate with each other and the requiring activity to verify the total requirement, considering necessary support and spares and including required training capability for deployed and/or pre-deployment training.

(2) Upon deployment, the capability will enter into Operations and Support.

f. Operations and Support

(1) The Program Manager will execute a support program that meets materiel readiness and operational support performance requirements, and sustains the urgent need acquisition program product in the most cost-effective manner over its anticipated total life cycle. Planning

for Operation and Support will begin during Pre-Development and will be documented in the Program Manager's Acquisition Strategy.

(2) The capability is operated and supported consistent with the sustainment plan approved by the MDA at the Production Milestone.

(3) The Program Manager or the user may propose urgently needed improvements to the capability. If within the scope of the approved urgent need, this enclosure may be used to acquire the improvements. All improvements must be approved by the MDA and may be funded, developed, and assessed in accordance with the procedures in this enclosure if urgent need criteria are met. If improvements are outside the scope of the validated or approved requirement, a new or amended urgent need statement may be required.

(4) In collaboration with the original requirement sponsor, a post-fielding Assessment will be conducted after deployment by the DoD Component on all capabilities fielded as urgent needs. If practical, this Assessment will be conducted in the field by the supporting operational test organization. If not practical, the Program Manager may use alternate means for this Assessment to include Program Manager or operational test agency Assessment of user feedback or other DoD Component feedback. All programs under DOT&E Oversight will be independently reviewed and approved by DOT&E.

(5) Disposition Analysis. No later than 1 year after the program enters Operations and Support (or earlier if directed by the DoD Component), the DoD Component will appoint an official to conduct a Disposition Analysis. Based on the analysis, the DoD Component Head and the CAE will prepare a determination document for disposition of the product. The disposition analysis will consider the performance of the fielded system, long term operational needs and, the relationship of the capability to the component's current and planned inventory of equipment. The analysis will also consider the continuation of non-materiel initiatives, the extension of science and technology developments related to the fielded capability, and the completion of MDA-approved and funded materiel improvements. The disposition official will recommend one of the following options:

(a) Termination: Demilitarization or Disposal. The system will be demilitarized and disposed of in accordance with all legal and regulatory requirements and policy related to safety (including explosive safety) and the environment. The recommendation will be coordinated with the DoD Component or, for JUONS and JEONS, the Combatant Commands.

(b) Sustainment for Current Contingency. The system will continue operation and sustainment as an urgent need for the current contingency. Multiple sustainment decisions may be made should the capability require operations and support longer than 2 years; however, such sustainment decisions will be made and re-documented at least every 2 years. The sustained urgent need solution will continue to receive the same priority of action as the original urgent need solution. This recommendation will be coordinated with the DoD Component validation authority.

(c) Transition to Program of Record. If the program provides a needed, enduring capability, it may be transitioned to a program of record. The disposition official will recommend to the CAE the acquisition point of entry into the defense acquisition system, and whether the MDA should retain program authority or whether it should transition elsewhere. The DoD Component validation authority will specify the capability requirements documents required to support transition to a new or existing program of record. This recommendation will be made to the Deputy Secretary of Defense for JUONs, JEONs, Warfighter SIG urgent needs, or Secretary of Defense RAA determinations, or to the DoD Component Head for Component specific UONs.

(6) The DoD Component Head and the CAE will review the disposition official's recommendation and record the Component Head's transition decision in a Disposition Determination. The Determination will specify the requirements documents required by the validation authority to support the transition. Programs of record will follow the procedures described in the core instruction.

4. INFORMATION REQUIREMENTS. Table 10 provides Information Requirements that replace or are in addition to selected statutory or regulatory requirements in Table 2 of Enclosure 1. These requirements are unique to the Rapid Acquisition of Urgent Needs and pertain to urgent needs below the cost thresholds of ACAT I and IA for programs.

Table 10. Information Requirements Unique to the Urgent Needs Rapid Acquisition Process

INFORMATION REQUIREMENT	RAPID ACQUISITION DECISION EVENTS		SOURCE
	Development	Production	
	Notes		
<b>STATUTORY REQUIREMENTS</b>			
<b>ASSESSMENT APPROACH</b>	•	•	10 U.S.C. 2366 (Ref. (n)) 10 U.S.C. 2399 (Ref. (n))
	<p>STATUTORY; only required for programs responding to urgent needs.</p> <p>- For programs on Director, Operational Test and Evaluation (DOT&amp;E) oversight, combined operational and live fire test plans will be submitted to DOT&amp;E at the Development Milestone, and post-deployment Assessment plans at the Production Milestone. DOT&amp;E will tailor the testing to rapidly evaluate critical operational issues.</p> <p>- Programs not on DOT&amp;E oversight are approved at the Service level; the program may require a rapid and focused operational Assessment and live fire testing (if applicable) prior to deploying an urgent need solution. The Acquisition Approach will identify any requirements to evaluate health, safety, or operational effectiveness, suitability, and survivability.</p>		
<b>COURSE OF ACTION ANALYSIS</b>	•		Meets the assessment requirements of SUBTITLE III, TITLE 40 (Ref. (q))
	<p>STATUTORY, replaces and serves as the AOA.</p> <p>Regulatory, approved by the MDA. For JUONs, JEONs, Warfighter SIG urgent needs, Secretary of Defense RAA determinations a copy is due to the Director, JRAC, within 3 business days of MDA approval.</p>		
<b>RAPID ACQUISITION RECOMMENDATION (RAA)</b>	•		SEC. 806, P.L. 107-314 (Ref. (p))
	<p>STATUTORY. Optional request to the Secretary of Defense for RAA. Considered as part of the development of the Acquisition Strategy. MDA approves the decision to request RAA at the Development Milestone.</p>		
<b>REGULATORY REQUIREMENT</b>			
<b>Disposition Authority's Report to the Component Acquisition Executive</b>			Para. 3.f.(5) of this enclosure
	<p>Regulatory. Based on the disposition official's recommendation in the Disposition Analysis, the Component head will determine and document the disposition of the initiative and process it in accordance with applicable Component and requirements authority procedures. Due within 1 year of entering the Operations and Support Phase (or earlier, if directed).</p>		
<p>Table Notes:</p> <ol style="list-style-type: none"> <li>1. A dot (●) in a cell indicates the specific applicability of the requirement to the life-cycle event</li> <li>2. Documentation required for the identified events will be submitted no later than 45 calendar days before the planned review.</li> <li>3. While these requirements are specific to programs responding to urgent needs, they are additive to the requirements identified in Table 2 in Enclosure 1.</li> </ol>			

GLOSSARY

A complete Glossary of acquisition terms and common acquisition acronyms is maintained on the Defense Acquisition University website. The DAU Glossary may be found at <https://dap.dau.mil/glossary/Pages/Default.aspx>.



## Department of Defense **INSTRUCTION**

**NUMBER 5000.02**

December 8, 2008

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USD(AT&L)

SUBJECT: Operation of the Defense Acquisition System

References: See Enclosure 1

1. PURPOSE. This Instruction:

a. Reissues Reference (a) to implement DoD Directive 5000.01 (Reference (b)), the guidelines of Office of Management and Budget (OMB) Circular A-11 (Reference (c)), and the various laws, policy, and regulations listed in Enclosure 1 of this issuance.

b. Establishes a simplified and flexible management framework for translating capability needs and technology opportunities, based on approved capability needs, into stable, affordable, and well-managed acquisition programs that include weapon systems, services, and automated information systems (AISs).

c. Consistent with statutory requirements and Reference (b), authorizes Milestone Decision Authorities (MDAs) to tailor the regulatory information requirements and acquisition process procedures in this Instruction to achieve cost, schedule, and performance goals.

2. APPLICABILITY AND SCOPE. This Instruction applies to:

a. OSD, the Military Departments, the Office of the Chairman of the Joint Chiefs of Staff and the Joint Staff, the Combatant Commands, the Office of the Inspector General of the Department of Defense, the Defense Agencies, the DoD Field Activities, and all other organizational entities within the Department of Defense (hereafter referred to collectively as the "DoD Components").

b. All defense technology projects and acquisition programs, including acquisitions of services. Some requirements, where stated, apply only to Major Defense Acquisition Programs (MDAPs) or Major Automated Information System (MAIS) programs.

c. Highly sensitive classified, cryptologic, and intelligence projects and programs shall follow this Instruction and Reference (b) to the extent practicable.

d. Joint Department of Defense and Director of National Intelligence oversight of wholly and majority National Intelligence Program-funded acquisition programs shall be conducted in accordance with Intelligence Community Policy Guidance 105.1 (Reference (d)), and the Memorandum of Agreement between the Director of National Intelligence and the Secretary of Defense concerning the Management of Acquisition Programs Executed at the Department of Defense Intelligence Community Elements (Reference (e)).

### 3. RESPONSIBILITIES

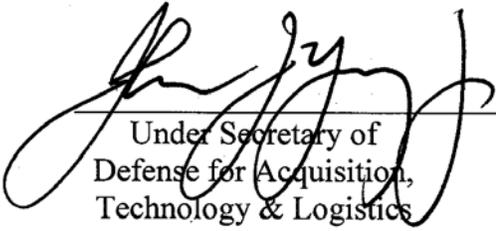
a. MDAs shall establish mandatory procedures for assigned programs. These procedures shall not exceed the requirements for MDAPs and MAIS and other acquisition programs established in this Instruction or in Reference (b).

b. The Heads of the DoD Components shall keep the issuance of any directives, instructions, policy memorandums, or regulations necessary to implement the mandatory procedures contained in this Instruction and Reference (b) to a minimum. Waivers or requests for exceptions to the provisions of this Instruction shall be submitted to the Under Secretary of Defense for Acquisition, Technology and Logistics (USD(AT&L)), the Assistant Secretary of Defense for Networks and Information Integration (ASD(NII)), or the Director, Operational Test and Evaluation (DOT&E), as appropriate, via the Component Acquisition Executive (CAE). Statutory requirements cannot be waived unless the statute specifically provides for waiver of the stated requirements.

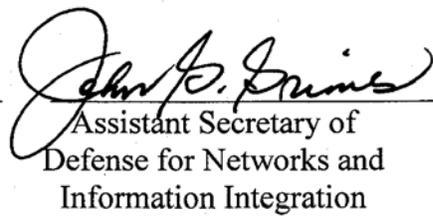
4. PROCEDURES. See Enclosure 2. Additionally, Enclosure 3 of this issuance provides a summary of acquisition category (ACAT) program levels and the decision authority for each ACAT. Tables in Enclosure 4 identify statutory and regulatory information requirements for all milestones and phases, Earned Value Management (EVM) implementation policy, the statutory and regulatory policy for Acquisition Program Baselines (APBs), and program categories with unique decision forums or policies. Enclosure 5 identifies the specific statutory and regulatory requirements applicable to information technology (IT) programs, including National Security Systems (NSS). Enclosure 6 details specific test and evaluation (T&E) procedures. Enclosure 7 provides detailed policy for resource estimation. The policy for Human Systems Integration (HSI) is in Enclosure 8; and policy applicable to the acquisition of services is in Enclosure 9. Enclosure 10 summarizes the administrative and international policy applicable to all acquisition programs. Enclosure 11 provides specific policy applicable to Defense Business Systems, and Enclosure 12 provides policy for Systems Engineering.

5. RELEASABILITY. UNLIMITED. This Instruction is approved for public release. Copies may be obtained through the Internet from the DoD Issuances Web Site at <http://www.dtic.mil/whs/directives>.

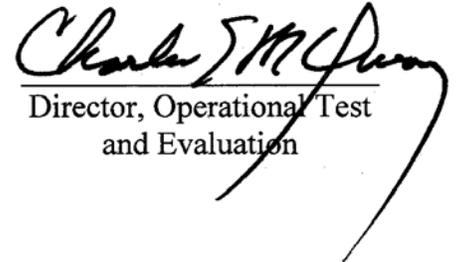
6. EFFECTIVE DATE. This Instruction is effective immediately.



Under Secretary of  
Defense for Acquisition,  
Technology & Logistics



Assistant Secretary of  
Defense for Networks and  
Information Integration



Director, Operational Test  
and Evaluation

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- (f) Defense Acquisition Guidebook<sup>3</sup>
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<sup>1</sup> [http://www.dni.gov/electronic\\_reading\\_room/ICPG%20105.1.pdf](http://www.dni.gov/electronic_reading_room/ICPG%20105.1.pdf)

<sup>2</sup> <https://akss.dau.mil/Documents/Policy/SECDEF%20MOA%20NIP-Funded%20Acquisition%20Programs%20Executed%20at%20the%20DoD%20Intelligence%20Community%20Elements.pdf>

<sup>3</sup> <http://akss.dau.mil/dag/>

<sup>4</sup> <https://disronline.disa.mil/>

<sup>5</sup> <https://acc.dau.mil/GetAttachment.aspx?id=18545&pname=file&aid=729&lang=en-US>

<sup>6</sup> Defense Intelligence Agency, Office of the Director, (703) 695-7353

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- (w) Section 814 of Public Law 110-417, "Duncan Hunter National Defense Authorization Act for Fiscal Year 2009," "Configuration Steering Boards for Cost Control Under Major Defense Acquisition Programs"
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- (y) Section 644 of title 15, United States Code, "Procurement strategies; contract bundling"
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<sup>7</sup> <http://akss.dau.mil/>

<sup>8</sup> Defense Intelligence Agency, Office of the Deputy Director for Analysis, (202) 231-4855

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- (aw) National Security Space Acquisition Policy 03-01, "Guidance for DoD Space System Acquisition Process," December 27, 2004<sup>10</sup>
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<sup>13</sup> [http://www.dod.mil/dbt/products/investment/IRB\\_CONOPS\\_29-AUG-2006.pdf](http://www.dod.mil/dbt/products/investment/IRB_CONOPS_29-AUG-2006.pdf)

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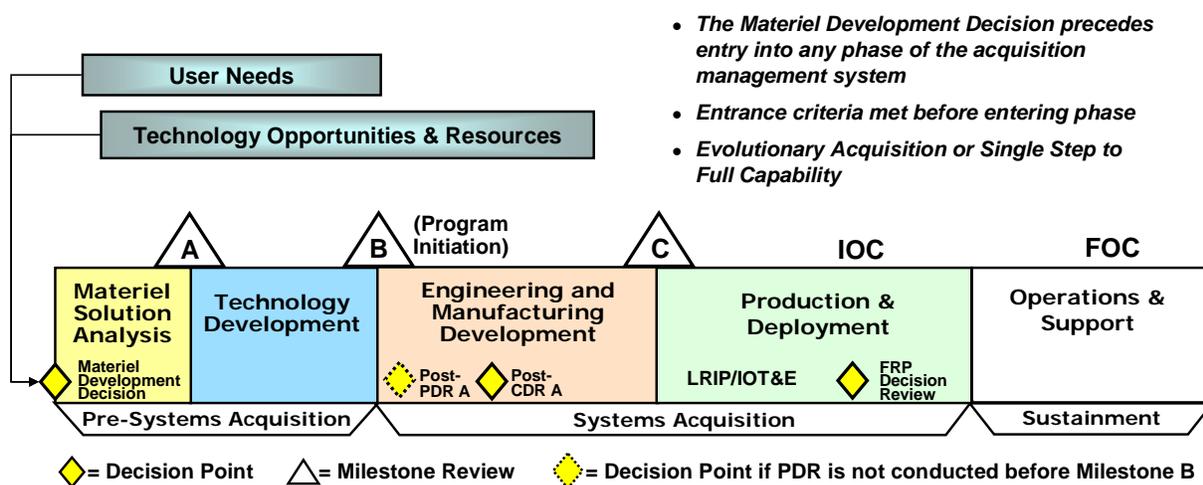
ENCLOSURE 2

PROCEDURES

1. DEFENSE ACQUISITION MANAGEMENT SYSTEM

a. Figure 1 depicts the Defense Acquisition Management System.

Figure 1. The Defense Acquisition Management System.



b. Consistent with this Instruction and Reference (b), the Program Manager (PM) and the MDA shall exercise discretion and prudent business judgment to structure a tailored, responsive, and innovative program.

c. Following the Materiel Development Decision, the MDA may authorize entry into the acquisition management system at any point consistent with phase-specific entrance criteria and statutory requirements. Progress through the acquisition management system depends on obtaining sufficient knowledge to continue to the next phase of development.

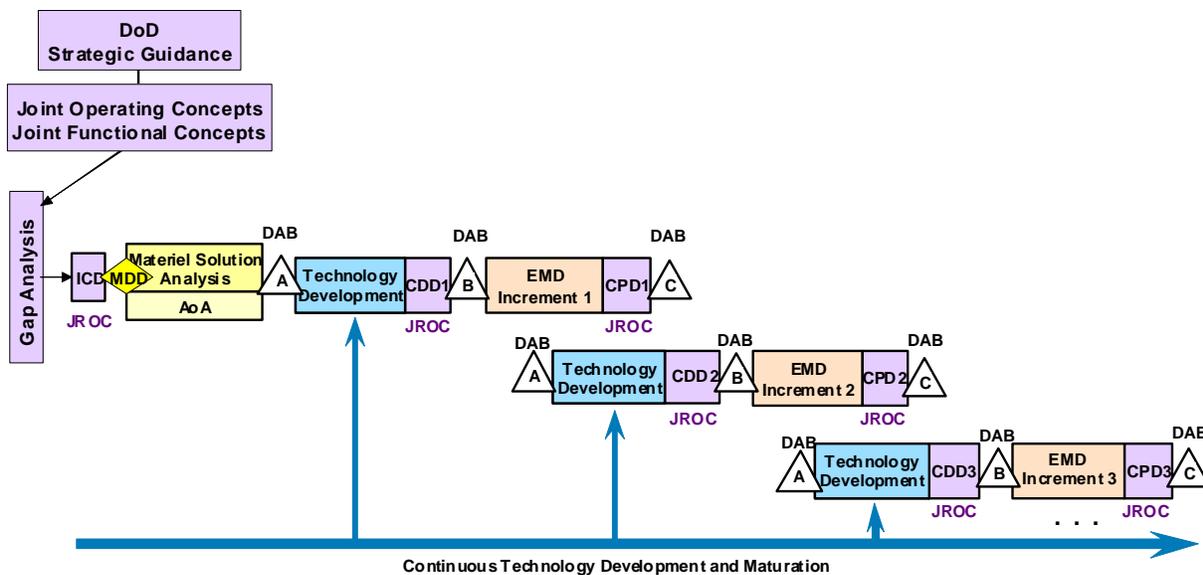
d. The tables in Enclosure 4 identify the statutory and regulatory information requirements for each milestone and decision point. Additional non-mandatory guidance on best practices, lessons learned, and expectations is available in the Defense Acquisition Guidebook (Reference (f)).

e. Procedures associated with Acquisitions of Services and with Defense Business Systems are described in Enclosures 9 and 11, respectively.

**2. EVOLUTIONARY ACQUISITION**

a. Evolutionary acquisition is the preferred DoD strategy for rapid acquisition of mature technology for the user. An evolutionary approach delivers capability in increments, recognizing, up front, the need for future capability improvements. The objective is to balance needs and available capability with resources, and to put capability into the hands of the user quickly. The success of the strategy depends on phased definition of capability needs and system requirements, and the maturation of technologies that lead to disciplined development and production of systems that provide increasing capability over time. (See Figure 2.)

Figure 2. Requirements and Acquisition Process Flow.



b. Evolutionary acquisition requires collaboration among the user, tester, and developer. In this process, a needed operational capability is met over time by developing several increments, each dependent on available mature technology. Technology development preceding initiation of an increment shall continue until the required level of maturity is achieved, and prototypes of the system or key system elements are produced. Successive Technology Development Phases may be necessary to mature technology for multiple development increments (section 803 of Public Law (P.L.) 107-314 (Reference (g))).

c. Each increment is a militarily useful and supportable operational capability that can be developed, produced, deployed, and sustained. Each increment will have its own set of threshold and objective values set by the user. Block upgrades, pre-planned product improvement, and similar efforts that provide a significant increase in operational capability and meet an acquisition category threshold specified in this document shall be managed as separate increments under this Instruction.

### 3. USER NEEDS AND TECHNOLOGY OPPORTUNITIES

a. The capability needs and acquisition management systems shall use Joint Concepts, integrated architectures, and an analysis of doctrine, organization, training, materiel, leadership and education, personnel, and facilities (DOTMLPF) in an integrated, collaborative process to define needed capabilities to guide the development of affordable systems. The Chairman of the Joint Chiefs of Staff, with the assistance of the Joint Requirements Oversight Council (JROC), shall assess and provide advice regarding military capability needs for defense acquisition programs. The process through which the Chairman provides advice is described in Chairman of the Joint Chiefs of Staff Instruction 3170.01 (Reference (h)). Representatives from multiple DoD communities shall assist in formulating broad, time-phased, operational goals, and describing requisite capabilities in the Initial Capabilities Document (ICD). They shall examine multiple concepts to optimize the way the Department of Defense provides these capabilities.

b. When the ICD demonstrates the need for a materiel solution, the JROC shall recommend that the MDA consider potential materiel solutions. The cognizant MDA is determined as described in Enclosure 3. The MDA, working with appropriate stakeholders, shall determine whether there is sufficient information to proceed with a Materiel Development Decision. If the MDA decides that additional analysis is required, a designated office shall prepare, and the MDA shall approve, study guidance to ensure that necessary information is available to support the decision.

c. Promising technologies shall be identified from all sources domestic and foreign, including government laboratories and centers, academia, and the commercial sector. In addition, PMs shall consider the use of technologies developed under the Small Business Innovation Research (SBIR) program, and give favorable consideration to successful SBIR technologies. The risk of introducing these technologies into the acquisition process shall be reduced; coordination, cooperation, and mutual understanding of technology issues shall be promoted. The conduct of Science and Technology (S&T) activities shall not preclude, and where practicable, shall facilitate future competition.

d. The DoD Enterprise Architecture shall underpin all information architecture development. In accordance with DoD Directive 8000.01 (Reference (i)), each integrated solution architecture shall have three views: operational, systems, and technical. The standards used to form the technical views of integrated architectures shall be selected from those contained in the current approved version of the DoD IT Standards Registry (Reference (j)).

### 4. MATERIEL SOLUTION ANALYSIS PHASE

a. Purpose. The purpose of this phase is to assess potential materiel solutions and to satisfy the phase-specific entrance criteria for the next program milestone designated by the MDA.

b. Entrance Criteria. Entrance into this phase depends upon an approved ICD resulting from the analysis of current mission performance and an analysis of potential concepts across the DoD Components, international systems from allies, and cooperative opportunities.

c. Phase Description

(1) The Materiel Solution Analysis Phase begins with the Materiel Development Decision review. The Materiel Development Decision review is the formal entry point into the acquisition process and shall be mandatory for all programs. Table 3 in Enclosure 4 identifies all regulatory requirements for the Materiel Development Decision review.

(2) Funding for this phase shall normally be limited to satisfaction of the Materiel Solution Analysis Phase objectives.

(3) At the Materiel Development Decision review, the Joint Staff shall present the JROC recommendations and the DoD Component shall present the ICD including: the preliminary concept of operations, a description of the needed capability, the operational risk, and the basis for determining that non-materiel approaches will not sufficiently mitigate the capability gap. The Director, Program Analysis & Evaluation (DPA&E), (or DoD Component equivalent) shall propose study guidance for the Analysis of Alternatives (AoA).

(4) The MDA shall approve the AoA study guidance; determine the acquisition phase of entry; identify the initial review milestone; and designate the lead DoD Component(s). MDA decisions shall be documented in an Acquisition Decision Memorandum (ADM). The MDA's decision to begin Materiel Solution Analysis DOES NOT mean that a new acquisition program has been initiated.

(5) Following approval of the study guidance, the lead DoD Component(s) shall prepare an AoA study plan to assess preliminary materiel solutions, identify key technologies, and estimate life-cycle costs. The purpose of the AoA is to assess the potential materiel solutions to satisfy the capability need documented in the approved ICD.

(6) The ICD and the AoA study guidance shall guide the AoA and Materiel Solution Analysis Phase activity. The AoA shall focus on identification and analysis of alternatives, measures of effectiveness, cost, schedule, concepts of operations, and overall risk. The AoA shall assess the critical technology elements (CTEs) associated with each proposed materiel solution, including technology maturity, integration risk, manufacturing feasibility, and, where necessary, technology maturation and demonstration needs. To achieve the best possible system solution, emphasis shall be placed on innovation and competition. Existing commercial-off-the-shelf (COTS) functionality and solutions drawn from a diversified range of large and small businesses shall be considered.

(7) If the MDA determines that the initial review milestone specified at the Materiel Development Decision is inconsistent with the maturity of the preferred materiel solution, an alternative review milestone shall be designated.

(8) The Materiel Solution Analysis Phase ends when the AoA has been completed, materiel solution options for the capability need identified in the approved ICD have been recommended by the lead DoD Component conducting the AoA, and the phase-specific entrance criteria for the initial review milestone have been satisfied.

## 5. TECHNOLOGY DEVELOPMENT PHASE

a. Purpose. The purpose of this phase is to reduce technology risk, determine and mature the appropriate set of technologies to be integrated into a full system, and to demonstrate CTEs on prototypes. Technology Development is a continuous technology discovery and development process reflecting close collaboration between the S&T community, the user, and the system developer. It is an iterative process designed to assess the viability of technologies while simultaneously refining user requirements.

b. Entrance Criteria. Entrance into this phase depends on the completion of the AoA, a proposed materiel solution, and full funding for planned Technology Development Phase activity.

### c. Phase Description

(1) At Milestone A, the MDA shall review the proposed materiel solution and the draft Technology Development Strategy (TDS). The Technology Development Phase begins when the MDA has approved a materiel solution and the TDS, and has documented the decision in an ADM. The tables in Enclosure 4 identify all statutory and regulatory requirements applicable to Milestone A.

(2) The MDA for an MDAP, without the authority to delegate, shall sign a certification memorandum for record prior to Milestone A approval (section 2366a of title 10, United States Code (U.S.C.) (Reference (k))). The memorandum shall include the statements in section 2366a of Reference (k) without modification. The ADM at Milestone A shall include the statement: "I have made the certifications required by section 2366a of title 10, United States Code."

(3) If, during Technology Development, the cost estimate upon which the MDA based the Milestone A certification increases by 25 percent or more, the PM shall notify the MDA of the increase. The MDA shall again consult with the JROC on matters related to program requirements and the military need(s) for the system. The MDA shall determine whether the level of resources required to develop and procure the system remains consistent with the priority level assigned by the JROC. If not, the MDA may rescind the Milestone A approval if the MDA determines that such action is in the interest of national defense.

(4) This effort normally shall be funded only for the advanced development work. Technology development for an MDAP shall not proceed without Milestone A approval. For business area capabilities, commercially available solutions shall be preferred. A favorable Milestone A decision DOES NOT mean that a new acquisition program has been initiated.

(5) At Milestone A, the DoD Component shall submit a cost estimate for the proposed solution(s) identified by the AoA. If requested by the MDA, the Cost Analysis Improvement Group (CAIG) shall develop an independent cost assessment.

(6) Final Requests for Proposals (RFPs) for the Technology Development Phase shall not be released, nor shall any action be taken that would commit the program to a particular contracting strategy for Technology Development, until the MDA has approved the TDS.

(7) The TDS shall document the following:

(a) The rationale for adopting an evolutionary strategy (the preferred approach) or using a single-step-to-full-capability strategy (e.g., for common supply items or COTS items). For an evolutionary acquisition, the TDS shall include a preliminary description of how the materiel solution will be divided into acquisition increments based on mature technology and an appropriate limitation on the number of prototype units or engineering development models that may be produced in support of a Technology Development Phase;

(b) A preliminary acquisition strategy, including overall cost, schedule, and performance goals for the total research and development program;

(c) Specific cost, schedule, and performance goals, including exit criteria, for the Technology Development Phase;

(d) A description of the approach that will be used to ensure data assets will be made visible, accessible, and understandable to any potential user as early as possible (DoD Directive 8320.02 (Reference (l))).

(e) A list of known or probable Critical Program Information (CPI) and potential countermeasures such as anti-tamper in the preferred system concept and in the critical technologies and competitive prototypes to inform program protection (DoD Instruction 5200.39 (Reference (m))) and design integration during the Technology Development Phase.

(f) A time-phased workload assessment identifying the manpower and functional competency requirements for successful program execution and the associated staffing plan, including the roles of government and non-government personnel.

(g) A data management strategy (see Section 9 in Enclosure 12).

(h) A summary of the CAIG-approved Cost and Software Data Reporting (CSDR) Plan(s) for the Technology Development Phase (see Section 3 in Enclosure 7).

(8) During Technology Development and succeeding acquisition phases, the PM shall give small business the maximum practical opportunity to participate. Where feasible, the PM shall leverage programs which employ people with disabilities.

(9) The TDS and associated funding shall provide for two or more competing teams producing prototypes of the system and/or key system elements prior to, or through, Milestone B. Prototype systems or appropriate component-level prototyping shall be employed to reduce technical risk, validate designs and cost estimates, evaluate manufacturing processes, and refine requirements. Information technology initiatives shall prototype subsets of overall functionality

using one or more teams, with the intention of reducing enterprise architecture risks, prioritizing functionality, and facilitating process redesign.

d. Additional Phase Requirements

(1) Additional considerations apply for shipbuilding and AIS programs.

(a) The MDA may initiate shipbuilding programs at the beginning of Technology Development. The information required by the tables in Enclosure 4 shall support program initiation. The CAIG shall prepare a cost assessment in lieu of an independent cost estimate (ICE), and the DoD Component shall provide a preliminary assessment of the maturity of key technologies. CAIG cost assessments for other acquisition category (ACAT) I and IA programs shall be prepared at the MDA's request.

(b) Before requesting a Milestone A decision for an AIS program, DoD Components shall affirmatively answer the following questions:

1. Does 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. Does the acquisition support work processes that have been simplified or otherwise redesigned to reduce costs, improve effectiveness, and make maximum use of COTS technology?

(2) The ICD and the TDS shall guide, and systems engineering planning shall support, this effort. Multiple technology development demonstrations may be necessary before the user and developer agree that a proposed technology solution is affordable, militarily useful, and based on mature, demonstrated technology. Life-cycle sustainment of proposed technologies shall be planned. CPI shall be identified and shall inform the preparation of the Program Protection Plan (PPP).

(3) If an evolutionary strategy is used, the initial capability represents only partial fulfillment of the overall capability described in the ICD, and successive technology development efforts continue until all capabilities have been achieved. In an evolutionary acquisition, the identification and development of the technologies necessary for follow-on increments continue in parallel with the acquisition of preceding increments, allowing the mature technologies to more rapidly proceed into the Engineering and Manufacturing Development (EMD) Phase. Each increment of an evolutionary acquisition program that includes a Milestone A shall have an MDA-approved TDS.

(4) The management and mitigation of technology and technology integration risk, which allows less costly and less time-consuming systems development, is a crucial part of overall program management and is especially relevant to meeting cost and schedule goals.

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Objective assessment of technology maturity and risk shall be a routine aspect of DoD acquisition. Technology developed in S&T or procured from industry or other sources shall have been demonstrated in a relevant environment or, preferably, in an operational environment to be considered mature enough to use for product development (see the "Technology Readiness Assessment (TRA) Deskbook" (Reference (n))). Technology readiness assessments, and where necessary, independent assessments, shall be conducted. If technology is not mature, the DoD Component shall use alternative technology that is mature and that can meet the user's needs or engage the user in a dialog on appropriately modifying the requirements.

(5) PMs for all programs shall formulate a viable Reliability, Availability, and Maintainability (RAM) strategy that includes a reliability growth program as an integral part of design and development. RAM shall be integrated within the Systems Engineering processes, documented in the program's Systems Engineering Plan (SEP) and Life-Cycle Sustainment Plan (LCSP), and assessed during technical reviews, test and evaluation (T&E), and Program Support Reviews (PSRs).

(6) When consistent with Technology Development Phase objectives, associated prototyping activity, and the MDA-approved TDS, the PM shall plan a Preliminary Design Review (PDR) before Milestone B. PDR planning shall be reflected in the TDS and shall be conducted for the candidate design(s) to establish the allocated baseline (hardware, software, human/support systems) and underlying architectures and to define a high-confidence design. All system elements (hardware and software) shall be at a level of maturity commensurate with the PDR entrance and exit criteria. A successful PDR will inform requirements trades; improve cost estimation; and identify remaining design, integration, and manufacturing risks. The PDR shall be conducted at the system level and include user representatives and associated certification authorities. The PDR Report shall be provided to the MDA at Milestone B and include recommended requirements trades based upon an assessment of cost, schedule, and performance risk.

(7) The project shall exit the Technology Development Phase when an affordable program or increment of militarily useful capability has been identified; the technology and manufacturing processes for that program or increment have been assessed and demonstrated in a relevant environment; manufacturing risks have been identified; a system or increment can be developed for production within a short timeframe (normally less than 5 years for weapon systems); or, when the MDA decides to terminate the effort. During Technology Development, the user shall prepare the Capability Development Document (CDD) to support initiation of the acquisition program or evolutionary increment, refine the integrated architecture, and clarify how the program will lead to joint warfighting capability. The CDD builds on the ICD and provides the detailed operational performance parameters necessary to complete design of the proposed system. A Milestone B decision follows the completion of Technology Development.

6. ENGINEERING AND MANUFACTURING DEVELOPMENT (EMD) PHASE. (Statutes applicable to the Systems Development and Demonstration Phase shall be applicable to the EMD phase.)

a. Purpose. The purpose of the EMD Phase is to develop a system or an increment of capability; complete full system integration (technology risk reduction occurs during Technology Development); develop an affordable and executable manufacturing process; ensure operational supportability with particular attention to minimizing the logistics footprint; implement human systems integration (HSI); design for producibility; ensure affordability; protect CPI by implementing appropriate techniques such as anti-tamper; and demonstrate system integration, interoperability, safety, and utility. The CDD, Acquisition Strategy, SEP, and Test and Evaluation Master Plan (TEMP) shall guide this effort.

b. Entrance Criteria. Entrance into this phase depends on technology maturity (including software), approved requirements, and full funding. Unless some other factor is overriding in its impact, the maturity of the technology shall determine the path to be followed.

c. Phase Description

(1) Before proposing a new acquisition program, the DoD Components shall affirmatively answer the questions at sub-paragraphs 5.d.(1)(b)1 through 5.d.(1)(b)3 of this enclosure.

(2) Prior to beginning EMD, users shall identify and the requirements authority shall approve a minimum set of key performance parameters (KPPs), included in the CDD, that shall guide the efforts of this phase. Consistent with paragraph 9.d. of this enclosure, these KPPs may be refined, with the approval of the requirements authority, as conditions warrant. The CDD defines the set of KPPs that will apply to each increment of EMD (or to the entire system in a single step to full capability). To maximize program trade space and focus test and evaluation, the MDA, PEO, and PM shall work closely with the requirements authority to minimize KPPs and limit total identified program requirements. Performance requirements that do not support the achievement of KPP thresholds shall be limited and considered a part of the engineering trade space during development. During OT&E, a clear distinction shall be made between performance values that do not meet threshold requirements in the user capabilities document and performance values that should be improved to provide enhanced operational capability in future upgrades.

(3) EMD begins at Milestone B, which is normally the initiation of an acquisition program. There shall be only one Milestone B per program or evolutionary increment. Each increment of an evolutionary acquisition shall have its own Milestone B unless the MDA determines that the increment will be initiated at Milestone C. At Milestone B, the MDA shall approve the Acquisition Strategy and the Acquisition Program Baseline (APB). The MDA decision shall be documented in an ADM. The tables in Enclosure 4 identify the statutory and regulatory requirements that shall be met at Milestone B.

(4) Final RFPs for the EMD Phase, or any succeeding acquisition phase, shall not be released, nor shall any action be taken that would commit the program to a particular contracting strategy, until the MDA has approved the Acquisition Strategy. The PM shall include language in the RFP advising offerors that (1) the government will not award a contract to an offeror whose proposal is based on CTEs that have not been demonstrated in a relevant environment,

and (2) that offerors will be required to specify the technology readiness level of the CTEs on which their proposal is based and to provide reports documenting how those CTEs have been demonstrated in a relevant environment.

(5) The MDA for an MDAP, without the authority to delegate, shall assess the program business case and sign a certification memorandum prior to Milestone B approval (section 2366b of Reference (k)). The memorandum shall include the statements in section 2366b of Reference (k) without modification. If the program is initiated at a later date, i.e., Milestone C, a similar memorandum shall be prepared as a matter of policy. The ADM shall include the statement: "I have reviewed the program and the business case analysis and have made the certifications required, or executed a waiver of the applicability of one or more of the components of the certification required, as authorized by subsection 2366b(d) of title 10, United States Code." The PM shall immediately notify the MDA of any program changes that alter the substantive basis of the MDA certification or otherwise cause the program to deviate significantly from the materiel presented to the MDA in support of such certification.

(6) EMD has two major efforts: Integrated System Design, and System Capability and Manufacturing Process Demonstration. Additionally, the MDA shall conduct a Post-PDR Assessment when consistent with the Acquisition Strategy, and a Post-Critical Design Review (CDR) Assessment to end Integrated System Design.

(a) Integrated System Design. This effort is intended to define system and system-of-systems functionality and interfaces, complete hardware and software detailed design, and reduce system-level risk. Integrated System Design shall include the establishment of the product baseline for all configuration items.

(b) Post-PDR Assessment. If a PDR has not been conducted prior to Milestone B, the PM shall plan for a PDR as soon as feasible after program initiation. PDR planning shall be reflected in the Acquisition Strategy and conducted consistent with the policies specified in paragraph 5.d.(6). Following PDR, the PM shall plan and the MDA shall conduct a formal Post-PDR Assessment. The PDR report shall be provided to the MDA prior to the assessment and reflect any requirements trades based upon the PM's assessment of cost, schedule, and performance risk. The MDA will consider the results of the PDR and the PM's assessment, and determine whether remedial action is necessary to achieve APB objectives. The results of the MDA's Post-PDR Assessment shall be documented in an ADM.

(c) Post-CDR Assessment. The MDA shall conduct a formal program assessment following system-level CDR. The system-level CDR provides an opportunity to assess design maturity as evidenced by measures such as: successful completion of subsystem CDRs; the percentage of hardware and software product build-to specifications and drawings completed and under configuration management; planned corrective actions to hardware/software deficiencies; adequate developmental testing; an assessment of environment, safety and occupational health risks; a completed failure modes and effects analysis; the identification of key system characteristics; the maturity of critical manufacturing processes; and an estimate of system reliability based on demonstrated reliability rates.

1. The PM shall provide a Post-CDR Report to the MDA that provides an overall assessment of design maturity and a summary of the system-level CDR results which shall include, but not be limited to:

a. The names, organizations, and areas of expertise of independent subject matter expert participants and CDR chair;

b. A description of the product baseline for the system and the percentage of build-to packages completed for this baseline;

c. A summary of the issues and actions identified at the review together with their closure plans;

d. An assessment of risk by the participants against the exit criteria for the EMD Phase; and

e. Identification of those issues/risks that could result in a breach to the program baseline or substantively impact cost, schedule, or performance.

2. The MDA shall review the Post-CDR Report and the PM's resolution/mitigation plans and determine whether additional action is necessary to satisfy EMD Phase exit criteria and to achieve the program outcomes specified in the APB. The results of the MDA's Post-CDR Assessment shall be documented in an ADM.

3. Successful completion of the Post-CDR Assessment ends Integrated System Design and continues the EMD Phase into System Capability and Manufacturing Process Demonstration.

(d) System Capability and Manufacturing Process Demonstration. This effort is intended to demonstrate the ability of the system to operate in a useful way consistent with the approved KPPs and that system production can be supported by demonstrated manufacturing processes. The program shall enter System Capability and Manufacturing Process Demonstration upon completion of the Post-CDR Assessment and establishment of an initial product baseline. This effort shall end when the system meets approved requirements and is demonstrated in its intended environment using the selected production-representative article; manufacturing processes have been effectively demonstrated in a pilot line environment; industrial capabilities are reasonably available; and the system meets or exceeds exit criteria and Milestone C entrance requirements. Successful developmental test and evaluation (DT&E) to assess technical progress against critical technical parameters, early operational assessments, and, where proven capabilities exist, the use of modeling and simulation to demonstrate system/system-of-systems integration are critical during this effort. T&E should be used to assess improvements to mission capability and operational support based on user needs and should be reported in terms of operational significance to the user. The completion of this phase is dependent on a decision by the MDA to commit to the program at Milestone C or a decision to end this effort.

d. Additional Phase Requirements

(1) For shipbuilding programs, the required program information shall be updated in support of the Milestone B decision, and the ICE shall be completed. The lead ship in a class shall normally be authorized at Milestone B. Technology readiness assessments shall consider the risk associated with critical subsystems prior to ship installation. Long lead for follow ships may be initially authorized at Milestone B, with final authorization and follow ship approval by the MDA, dependent on completion of critical subsystem demonstration and an updated assessment of technology maturity.

(2) In an evolutionary acquisition program, the initial increment will be preceded by a Materiel Development Decision. Development of each succeeding increment shall begin with the milestone or decision point determined by the MDA, consistent with statute and the demonstrated maturity of key technologies. Production resulting from that increment shall begin with a Milestone C. The requirements of the tables at Enclosure 4 shall apply to each increment based on the ACAT level of the entire planned program.

(3) Each program or increment shall have an APB (see Section 4 and Table 6 in Enclosure 4) establishing program goals – thresholds and objectives – for the minimum number of cost, schedule, and performance parameters that describe the program over its life cycle.

(4) An affordability determination results from the process of addressing cost during the requirements process and is included in each CDD using life-cycle cost or, if available, total ownership cost. Transition into EMD also requires full funding (i.e., inclusion of the dollars and manpower needed for all current and future efforts to carry out the acquisition strategy in the budget and out-year program), which shall be programmed in anticipation of the Milestone B decision. In general, a Milestone B should be planned when a system concept has been selected, a PM has been assigned, requirements have been approved, and engineering and manufacturing development is ready to begin. In no case shall Milestone B be approved without full funding. The DoD Components shall fully fund their share of approved joint and international cooperative program commitments.

(5) At Milestone B, the MDA shall determine the Low-Rate Initial Production (LRIP) quantity for MDAPs and major systems. LRIP quantities shall be minimized. The LRIP quantity for an MDAP (with rationale for quantities exceeding 10 percent of the total production quantity documented in the Acquisition Strategy) shall be included in the first Selected Acquisition Report (SAR) 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. The DOT&E, following consultation with the PM, shall determine the number of production or production-representative test articles required for live-fire test and evaluation (LFT&E) and initial operational test and evaluation (IOT&E) of programs on the OSD T&E Oversight List (MDAPs as defined in paragraph a(2)(B) of section 139 of Reference (k)). For a system that is not on the OSD Operational Test & Evaluation (OT&E) Oversight List, the operational test agency (OTA), following consultation with the PM, shall determine the number of test articles required for IOT&E. Modifications to an existing system with an established production base

may not require low-rate production to provide production or production-representative articles for operational testing; test articles, if needed, may come from the existing production line.

(6) EMD effectively integrates the acquisition, engineering, and manufacturing development processes with T&E (see Enclosure 6). T&E shall be conducted in an appropriate continuum of live, virtual, and constructive system and operational environments. Developmental and operational test activities shall be integrated and seamless throughout the phase. Evaluations shall take into account all available and relevant data and information from contractor and government sources. The independent planning of dedicated IOT&E (i.e., the OT&E required by paragraphs (a) and (b) of section 2399 of Reference (k)), and Follow-on OT&E (FOT&E), if required, shall be the responsibility of the appropriate OTA. Evaluations shall include a comparison with current mission capabilities using existing data, so that measurable improvements can be determined. If such evaluation is considered costly relative to the benefits gained, the PM shall propose an alternative evaluation approach. This evaluation shall make a clear distinction between deficiencies uncovered during testing relative to the approved requirements, and recommendations for improvement not directly linked to requirements. A DOT&E-approved LFT&E strategy shall guide LFT&E activity.

(7) The PM shall prepare and the MDA shall approve an Acquisition Strategy to guide activity during EMD.

(a) The Acquisition Strategy shall describe how the PM plans to employ contract incentives to achieve required cost, schedule, and performance outcomes.

(b) The strategy shall include a time-phased workload assessment identifying the manpower and functional competency requirements for successful program execution and the associated staffing plan, including the roles of government and non-government personnel.

(c) If the program is dependent on the outcome of other acquisition programs or must provide capabilities to other programs, those relationships shall be detailed in the acquisition strategy. Similarly, if a program is part of a system-of-systems or family-of-systems, the relationship and associated dependencies with other system elements shall be described.

(8) If the program acquisition strategy for a major system calls for the use of a lead system integrator, the MDA shall ensure that a contract is not awarded to an offeror that either has or is expected to acquire a direct financial interest in the development or construction of an individual system or an element of a system of systems. Exceptions may be granted as provided in section 2410p of Reference (k) which requires certification to the Committees on Armed Services of the Senate and House of Representatives. PMs shall stress the importance of appropriate checks and balances when contractors perform acquisition-related activities, and insist that the government will be singularly responsible for the performance of inherently governmental functions.

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(9) The MDA for an MDAP shall select the contract type for a development program at Milestone B (section 818 of P.L. 109-364 (Reference (o))). The contract type shall be consistent with the level of program risk and may be either a fixed price or cost contract. The MDA may choose a cost-type contract only upon written determination that (1) the program is so complex and technically challenging that it would not be practicable to reduce program risk to a level that would permit the use of a fixed-price contract, and (2) the complexity and technical challenge of the program is not the result of a failure to meet the requirements of section 2366b of Reference (k). The MDA's written determination shall include an explanation of the level of program risk, and, if the MDA determines that the program risk is high, the steps that have been taken to reduce program risk and the reasons for proceeding with Acquisition Strategy approval and/or Milestone B despite the high level of program risk.

(10) At Milestone B, the PM shall submit application(s) through the DoD Component to the ASD(NII)/DoD Chief Information Officer (CIO) for the review and assessment of new or modified communications waveforms. If a waveform is added or modified after Milestone B, the application shall be reviewed at Milestone C (DoD Instruction 4630.09 (Reference (p))).

(11) The MDA shall assess compliance with chemical, biological, radiological, and nuclear survivability requirements at Milestones B and C.

(12) Prior to beginning development, the DoD Component sponsoring an MDAP that will replace an existing system shall prepare a Replaced System Sustainment Plan for the existing system if the capability provided by the existing system will remain necessary and relevant during fielding of and transition to the new system. The sustainment plan shall provide for the budgeting to sustain the existing system until the new system assumes the majority of mission responsibility. The plan shall include the schedule for developing and fielding the new system, and include an analysis of the ability of the existing system to maintain mission capability against relevant threats (section 2437 of Reference (k) and Defense Intelligence Agency Directive 5000.200 (Reference (q))).

(13) PMs shall coordinate with the DoD Component manpower authority in advance of contracting for operational support services to ensure that tasks and duties that are designated as inherently governmental or exempt are not contracted. The determination of the workforce mix shall be accomplished in accordance with DoD Instruction 1100.22 (Reference (r)).

(14) The Department of Defense may not conduct OT&E, including operational assessment (OA), IOT&E, or FOT&E, until the DOT&E approves, in writing, the OT&E portions of the T&E plan for programs on the OSD T&E Oversight List and the adequacy of the plans (including the projected level of funding) for the OT&E to be conducted in connection with that program. This does not preclude the use of data from other test events in OT&E evaluations. OTA and DOT&E evaluators shall take into account all available and relevant data and information from contractor and government sources.

## 7. PRODUCTION AND DEPLOYMENT PHASE

a. Purpose. The purpose of the Production and Deployment Phase is to achieve an operational capability that satisfies mission needs. Operational test and evaluation shall determine the effectiveness and suitability of the system. The MDA shall make the decision to commit the Department of Defense to production at Milestone C and shall document the decision in an ADM. Milestone C authorizes entry into LRIP (for MDAPs and major systems), into production or procurement (for non-major systems that do not require LRIP) or into limited deployment in support of operational testing for MAIS programs or software-intensive systems with no production components. The tables in Enclosure 4 identify the statutory and regulatory requirements that shall be met at Milestone C.

b. Entrance Criteria. Entrance into this phase depends on the following criteria: acceptable performance in developmental test and evaluation and operational assessment (OSD OT&E oversight programs); mature software capability; no significant manufacturing risks; manufacturing processes under control (if Milestone C is full-rate production); an approved ICD (if Milestone C is program initiation); an approved Capability Production Document (CPD); a refined integrated architecture; acceptable interoperability; acceptable operational supportability; and demonstration that the system is affordable throughout the life cycle, fully funded, and properly phased for rapid acquisition. The CPD reflects the operational requirements, informed by EMD results, and details the performance expected of the production system. If Milestone C approves LRIP, a subsequent review and decision shall authorize full-rate production.

c. Phase Description. For MDAPs and other programs on the OSD T&E Oversight List, Production and Deployment has two major efforts, LRIP and Full-Rate Production and Deployment, and includes a Full-Rate Production Decision Review. For MAIS programs or software intensive systems with no production components, the Full-Rate Production Decision Review is referred to as the Full Deployment Decision Review.

(1) LRIP

(a) This 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 or production-representative articles for 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. Evaluations shall be conducted in the mission context expected at time of fielding, as described in the user's capability document. The MDA shall consider any new validated threat environments that will alter operational effectiveness. If the program has not demonstrated readiness to proceed to full-rate production, the MDA shall assess the cost and benefits of a break in production versus continuing buys before approving an increase in the LRIP quantity.

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

(c) 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.

(d) Except as specifically approved by the MDA, deficiencies identified in testing shall be resolved prior to proceeding beyond LRIP, and any fixes shall be verified in FOT&E.

(2) Full-Rate Production Criteria. An MDAP may not proceed beyond LRIP without MDA approval. The knowledge required to support this approval shall include demonstrated control of the manufacturing process and acceptable reliability, the collection of statistical process control data, and the demonstrated control and capability of other critical processes.

(a) For programs on the OSD T&E Oversight List, the decision to continue beyond low-rate to full-rate production, or beyond limited deployment of AISs or software-intensive systems with no developmental hardware, shall require completion of IOT&E and receipt of the "Beyond LRIP Report" (or equivalent report for MDAPs that are also AISs) by, and submission (where applicable) of the LFT&E Report to, the congressional defense committees, the Secretary of Defense, and the USD(AT&L).

(b) If a decision is made to proceed to operational use or to make procurement funds available for the program prior to a final decision to proceed beyond low-rate initial production (or limited deployment for MDAPs that are AISs), the DOT&E shall submit to the Secretary of Defense, the USD(AT&L), and the congressional defense committees the report required by paragraph (b)(2) of section 2399 of Reference (k) with respect to the program as soon as practicable after the decision. The DOT&E may decide to submit an interim or partial report if the operational testing completed to date is inadequate to determine operational effectiveness and suitability and survivability. If an interim or partial report is submitted, the DOT&E will prepare and submit the required final report as soon as possible after completing adequate operational testing to determine operational effectiveness and suitability and survivability.

(3) Full-Rate Production and Deployment. Continuation into full-rate production results from a successful Full-Rate Production (or Full Deployment) Decision Review by the MDA. The decision to proceed into Full-Rate Production will be documented in an ADM. This effort delivers the fully funded quantity of systems and supporting materiel and services for the program or increment to the users. During this effort, units will typically attain Initial Operational Capability (IOC). As technology, software, and threats change, FOT&E shall be considered to assess current mission performance and inform operational users during the development of new capability requirements. The tables at Enclosure 4 identify the statutory and regulatory requirements associated with this decision.

(4) Military Equipment Valuation. For Milestone C, the PM shall prepare a program description as part of the Acquisition Strategy. Throughout Production and Deployment, the PM or the life-cycle manager shall ensure that all deliverable equipment requiring capitalization is serially identified and valued at full cost; the full cost of each item of equipment is entered in the Item Unique Identification (IUID) registry; all solicitations, proposals, contracts, and/or orders for deliverable equipment are structured for proper segregation of each type of equipment based on its respective financial treatment; procedures are established to track all equipment items throughout their life cycle; and the status of items added, retired from operational use, or

transferred from one DoD Component to another DoD Component are updated quarterly throughout their life. Definitions and references for these terms are included in Reference (f).

## 8. OPERATIONS AND SUPPORT PHASE

a. Purpose. The purpose of the Operations and Support Phase is to execute a support program that meets materiel readiness and operational support performance requirements, and sustains the system in the most cost-effective manner over its total life cycle. Planning for this phase shall begin prior to program initiation and shall be documented in the LCSP. Operations and Support has two major efforts, Life-Cycle Sustainment and Disposal.

b. Entrance Criteria. Entrance into the Operations and Support Phase depends on meeting the following criteria: an approved CPD; an approved LCSP; and a successful Full-Rate Production (FRP) Decision.

### c. Phase Description

(1) Life-Cycle Sustainment. Life-cycle sustainment planning and execution seamlessly span a system's entire life cycle, from Materiel Solution Analysis to disposal. It translates force provider capability and performance requirements into tailored product support to achieve specified and evolving life-cycle product support availability, reliability, and affordability parameters.

(a) Life-cycle sustainment planning shall be considered during Materiel Solution Analysis, and shall mature throughout Technology Development. An LCSP shall be prepared for Milestone B. The planning shall be flexible and performance-oriented, reflect an evolutionary approach, and accommodate modifications, upgrades, and reprocurement. The LCSP shall be a part of the program's Acquisition Strategy and integrated with other key program planning documents. The LCSP shall be updated and executed during Production and Deployment and Operations and Support.

(b) Life-cycle sustainment considerations include supply; maintenance; transportation; sustaining engineering; data management; configuration management; HSI; environment, safety (including explosives safety), and occupational health; protection of critical program information and anti-tamper provisions; supportability; and interoperability.

(c) Effective sustainment of systems results from the design and development of reliable and maintainable systems through the continuous application of a robust systems engineering methodology. Accordingly, the PM shall:

1. Design the maintenance program to minimize total life-cycle cost while achieving readiness and sustainability objectives (DoD Directive 4151.18 (Reference (s))). Maintenance program management shall begin at program initiation.

2. Optimize operational readiness via:

a. Human-factors engineering to design systems that require minimal manpower; provide effective training; can be operated and maintained by users; and are suitable (habitable and safe with minimal environmental and occupational health hazards) and survivable (for both the crew and equipment).

b. Diagnostics, prognostics, and health management techniques in embedded and off-equipment applications when feasible and cost-effective (Reference (o));

c. Embedded training and testing, with a preference for approved DoD Automatic Test Systems (ATS) Families to satisfy ATS requirements;

d. Serialized item management techniques and the use of automatic identification technology (AIT), radio-frequency identification, and iterative technology refreshment. PMs shall ensure that data syntax and semantics for high-capacity AIT devices conform to International Organization for Standardization ISO 15418 and ISO 15434 (References (t) and (u)).

(d) The PM shall work with the user to document performance and sustainment requirements in performance agreements specifying objective outcomes, measures, resource commitments, and stakeholder responsibilities. The PM shall employ effective Performance-Based Life-Cycle Product Support (PBL) planning, development, implementation, and management. Performance-Based Life-Cycle Product Support represents the latest evolution of Performance-Based Logistics. Both can be referred to as "PBL." PBL offers the best strategic approach for delivering required life cycle readiness, reliability, and ownership costs. Sources of support may be organic, commercial, or a combination, with the primary focus optimizing customer support, weapon system availability, and reduced ownership costs. The DoD Components shall document sustainment procedures that ensure integrated combat support.

(e) DoD Components shall initiate system modifications, as necessary, to improve performance and reduce ownership costs, as constrained by section 2244a of Reference (k).

(f) The DoD Components, in conjunction with users, shall conduct continuing reviews of sustainment strategies comparing performance expectation, as defined in performance agreements, to actual performance results. PMs shall continuously identify deficiencies in these strategies, and adjust the LCSP as necessary to meet performance requirements.

(2) Disposal. At the end of its useful life, a system shall be demilitarized and disposed of in accordance with all legal and regulatory requirements and policy relating to safety (including explosives safety), security, and the environment. During the design process, PMs shall document hazardous materials contained in the system in the Programmatic Environment, Safety, and Occupational Health Evaluation (PESHE) (see Section 6 in Enclosure 12), and shall estimate and plan for the system's demilitarization and safe disposal. The demilitarization of conventional ammunition (including any item containing propellants, explosives, or pyrotechnics) shall be considered during system design.

## 9. REVIEW PROCEDURES

a. Review of ACAT ID and IAM Programs. The USD(AT&L) shall designate programs as ACAT ID or ACAT IAM (see Enclosure 3) when the program has special interest based on one or more of the following factors: technological complexity; Congressional interest; a large commitment of resources; the program is critical to achievement of a capability or set of capabilities; or the program is a joint program. Exhibiting one or more of these characteristics, however, shall not automatically lead to an ACAT ID or IAM designation.

b. Defense Acquisition Board (DAB) Review. The DAB shall advise the USD(AT&L) on critical acquisition decisions. The USD(AT&L) shall chair the DAB. An ADM shall document the decision(s) resulting from the review.

c. Information Technology (IT) Acquisition Board (ITAB) Review. The ITAB shall advise the USD(AT&L) or his or her designee on critical IT acquisition decisions, excluding defense business systems. These reviews shall facilitate the accomplishment of the DoD CIO's acquisition-related responsibilities for IT, including NSS, in accordance with subtitle III of title 40, U.S.C. (Reference (v)) and section 2223 of Reference (k). An ADM shall document the decision(s) resulting from the review.

d. Configuration Steering Boards (CSB). The Acquisition Executive of each DoD Component shall establish and chair a CSB with broad executive membership including senior representatives from the Office of the USD(AT&L) and the Joint Staff. Additional executive members shall include representatives from the office of the chief of staff of the Armed Force concerned, other Armed Forces representatives where appropriate, the military deputy to the CAE and the Program Executive Officer (PEO) (section 814 of P.L. 110-417, Reference (w)).

(1) The CSB shall meet at least annually to review all requirements changes and any significant technical configuration changes for ACAT I and IA programs in development that have the potential to result in cost and schedule impacts to the program. Such changes will generally be rejected, deferring them to future blocks or increments. Changes shall not be approved unless funds are identified and schedule impacts mitigated.

(2) The PM, in consultation with the PEO, shall, on a roughly annual basis, identify and propose a set of descoping options, with supporting rationale addressing operational implications, to the CSB that reduce program cost or moderate requirements. The CSB shall recommend to the MDA (if an ACAT ID or IAM program) which of these options should be implemented. Final decisions on descoping option implementation shall be coordinated with the Joint Staff and military department requirements officials.

e. Overarching Integrated Product Team (OIPT). An OIPT shall review program planning, facilitate program communications and issue resolution, and support the MDA for ACAT ID and IAM programs. The Investment Review Board (IRB) shall perform this function for MAIS business systems.

f. Program Support Reviews (PSRs). PSRs are a means to inform an MDA and Program Office of the status of technical planning and management processes by identifying cost, schedule, and performance risk and recommendations to mitigate those risks. PSRs shall be conducted by cross-functional and cross-organizational teams appropriate to the program and situation. PSRs for ACAT ID and IAM programs shall be planned by the Director, Systems and Software Engineering (SSE) to support OIPT program reviews, at other times as directed by the USD(AT&L), and in response to requests from PMs.

g. Independent Management Reviews ("Peer Reviews"). Peer Reviews shall be conducted on all Supplies and Services contracts. The reviews shall be advisory in nature and conducted in a manner which preserves the authority, judgment, and discretion of the contracting officer and senior officials of the acquiring organization. Pre-Award reviews shall be conducted on Supplies and Services contracts; Post-Award reviews shall be conducted on Services contracts. The Director, Defense Procurement, Acquisition Policy, and Strategic Sourcing (DPAP), in the Office of the USD(AT&L), shall conduct Peer Reviews for contracts with an estimated value of \$1 billion or more (including options). DoD Components shall establish procedures for contracts valued at less than \$1 billion. Section 6 of Enclosure 9 of this issuance describes the procedures for Peer Reviews of Services; the Pre-Award procedures in paragraph 6.a. of Enclosure 9 shall also apply to Peer Reviews of Supplies.

ENCLOSURE 3

ACQUISITION CATEGORY (ACAT) AND  
MILESTONE DECISION AUTHORITY (MDA)

1. GENERAL

a. A technology project or acquisition program shall be categorized based on its location in the acquisition process, dollar value, and MDA special interest. Table 1 contains the description and decision authority for ACAT I through III programs. When the ICD demonstrates a need for a materiel solution, the DoD Component sponsor shall assess the potential level of investment and plan a Materiel Development Decision review with the appropriate decision authority. The Defense Acquisition Executive (DAE) or designee shall review potential ACAT I and IA materiel solutions; the CAE or the individual designated by the CAE shall review potential ACAT II and III materiel solutions.

b. The DoD Component shall notify the USD(AT&L) when an increase in program cost or a change in acquisition strategy results in reclassifying a formerly lower ACAT program as an ACAT I or IA program. ACAT-level changes shall be reported as soon as the DoD Component anticipates that the program is within 10 percent of the next ACAT level. ACAT-level reclassification shall occur upon designation by the USD(AT&L).

(1) The CAE may request a reclassification of an ACAT I or IA program to a lower ACAT, consistent with Table 1. The request shall identify the reasons for the reduction in category. The category reduction shall become effective upon approval of the request by the USD(AT&L) or the ASD(NII)/DoD CIO when designated by the USD(AT&L).

(2) The USD(AT&L) may reclassify an acquisition program at any time.

2. TECHNOLOGY PROJECTS. Joint Experimentation, Defense Advanced Research Projects Agency projects, the Technology Transition Incentive Program, SBIR and Small Business Technology Transfer Programs, the Joint Integration & Interoperability Program, Joint Capability Technology Demonstrations, the Coalition Warfare Program, the Quick Reaction Special Projects/Rapid Reaction Fund, Foreign Comparative Testing, the Defense Acquisition Challenge Program, the Joint Test & Evaluation Program, the Joint Improvised Explosive Devices Defeat Office, the Rapid Reaction Technologies Office, and Defense Biometrics are some of the activities that facilitate and provide early joint technology and capability definition, development, experimentation, refinement, testing, and transition. The USD(AT&L) shall be the MDA for those projects that, if successful, will likely result in an MDAP or MAIS program unless the USD(AT&L) delegates milestone decision authority for a MAIS program.

Table 1. Description and Decision Authority for ACAT I – III Programs.

Acquisition Category	Reason for ACAT Designation	Decision Authority
ACAT I	<ul style="list-style-type: none"> <li>• MDAP (section 2430 of Reference (k))                             <ul style="list-style-type: none"> <li>○ Dollar value: estimated by the USD(AT&amp;L) to require an eventual total expenditure for research, development, test and evaluation (RDT&amp;E) 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</li> <li>○ MDA designation</li> </ul> </li> <li>• MDA designation as special interest</li> </ul>	ACAT ID: USD(AT&L)  ACAT IC: Head of the DoD Component or, if delegated, the CAE (not further delegable)
ACAT IA <sup>1,2</sup>	<ul style="list-style-type: none"> <li>• MAIS (Chapter 144A of Reference (k)): A DoD acquisition program for an Automated Information System<sup>3</sup> (either as a product or a service) that is either:                             <ul style="list-style-type: none"> <li>○ Designated by the MDA as a MAIS; or</li> <li>○ Estimated to exceed:                                     <ul style="list-style-type: none"> <li>▪ \$32 million in FY 2000 constant dollars for all expenditures, for all increments, regardless of the appropriation or fund source, directly related to the AIS definition, design, development, and deployment, and incurred in any single fiscal year; or</li> <li>▪ \$126 million in FY 2000 constant dollars for all expenditures, for all increments, regardless of the appropriation or fund source, directly related to the AIS definition, design, development, and deployment, and incurred from the beginning of the Materiel Solution Analysis Phase through deployment at all sites; or</li> <li>▪ \$378 million in FY 2000 constant dollars for all expenditures, for all increments, regardless of the appropriation or fund source, directly related to the AIS definition, design, development, deployment, operations and maintenance, and incurred from the beginning of the Materiel Solution Analysis Phase through sustainment for the estimated useful life of the system.</li> </ul> </li> </ul> </li> <li>• MDA designation as special interest</li> </ul>	ACAT IAM: USD(AT&L) or designee  ACAT IAC: Head of the DoD Component or, if delegated, the CAE (not further delegable)
ACAT II	<ul style="list-style-type: none"> <li>• Does not meet criteria for ACAT I</li> <li>• Major system                             <ul style="list-style-type: none"> <li>○ Dollar value: estimated by the DoD Component Head to require an eventual total expenditure for RDT&amp;E of more than \$140 million in FY 2000 constant dollars, or for procurement of more than \$660 million in FY 2000 constant dollars (section 2302d of Reference (k))</li> <li>○ MDA designation<sup>4</sup> (paragraph (5) of section 2302 of Reference (k))</li> </ul> </li> </ul>	CAE or the individual designated by the CAE <sup>4</sup>
ACAT III	<ul style="list-style-type: none"> <li>• Does not meet criteria for ACAT II or above</li> <li>• AIS that is not a MAIS</li> </ul>	Designated by the CAE <sup>4</sup>
<p>1. In some cases, an ACAT IA program, as defined above, also meets the definition of an MDAP. The USD(AT&amp;L) shall be the MDA for such programs unless delegated to a DoD Component. The statutory requirements that apply to MDAPs and MAIS shall apply to such programs.</p> <p>2. The MDA (either the USD(AT&amp;L) or, if delegated, the ASD(NII)/DoD CIO or another designee) shall designate MAIS programs as ACAT IAM or ACAT IAC. MAIS programs shall not be designated as ACAT II.</p> <p>3. Automated Information System: A system of computer hardware, computer software, data or telecommunications that performs functions such as collecting, processing, storing, transmitting, and displaying information. Excluded are computer resources, both hardware and software, that are:</p> <ul style="list-style-type: none"> <li>a. an integral part of a weapon or weapon system;</li> <li>b. used for highly sensitive classified programs (as determined by the Secretary of Defense);</li> <li>c. used for other highly sensitive information technology programs (as determined by the ASD(NII)/DoD CIO); or</li> <li>d. determined by the USD(AT&amp;L) or designee to be better overseen as a non-AIS program (e.g., a program with a low ratio of RDT&amp;E funding to total program acquisition costs or that requires significant hardware development).</li> </ul> <p>4. As delegated by the Secretary of Defense or Secretary of the Military Department.</p>		

ENCLOSURE 4

STATUTORY AND REGULATORY INFORMATION  
AND MILESTONE REQUIREMENTS

1. Tables 2-1, 2-2, 3, 4, and 5 show the information requirements for all milestones and phases, both statutory and regulatory. MDAs may tailor regulatory program information to fit the particular conditions of an individual program. Decisions to tailor regulatory information requirements shall be documented by the MDA. The non-mandatory Defense Acquisition Guidebook (Reference (f)) supports this Instruction to provide best practices, lessons learned, and expectations for the information required by these tables. Issues regarding the intent of the expectations described in the guidebook shall be resolved by the MDA. The Acquisition Knowledge Sharing System (Reference (x)) contains a library of mandatory policy and regulations and discretionary practices and advice.

2. The following tables and sections indicate applicability of requirements by program type.

Table 2-1. Statutory Requirements Applicable to MDAPs and  
MAIS Acquisition Programs (unless otherwise noted).

INFORMATION REQUIRED	APPLICABLE STATUTE	WHEN REQUIRED
<b>The following requirements are statutory for both MDAPs and MAIS acquisition programs</b>		
AoA	Subtitle III of Reference (v) Section 2366a of Reference ((k))	Milestone (MS) A Program Initiation for Ships MS B (updated as necessary) MS C (updated as necessary)
Benefit Analysis and Determination (applicable to bundled acquisitions only)) (part of Acquisition Strategy)	Paragraph (e) of Section 644 of title 15, U.S.C. (Reference (y))	MS B MS C (if no MS B)
Clinger-Cohen Act (CCA) Compliance (All IT—including NSS) (See Enclosure 5)	Subtitle III of Reference (v)	MS A Program Initiation for Ships MS B MS C Full-Rate Production (or Full Deployment) Decision Review (DR) (or equivalent)
Competition Analysis (Depot-level Maintenance \$3M rule) (part of Acquisition Strategy)	Section 2469 of Reference (k)	MS B MS C (if no MS B)
Cooperative Opportunities (part of TDS at MS A; part of Acquisition Strategy thereafter)	Paragraph (e) of Section 2350a of Reference (k)	MS A MS B MS C
Consideration of Technology Issues	Paragraph (b)(5) of Section 2364 of Reference (k)	MS A MS B MS C
Core Logistics Analysis/Source of Repair Analysis <sup>1</sup> (part of Acquisition Strategy)	Section 2464 of Reference (k) Section 2466 of Reference (k)	MS B MS C (if no MS B)

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Data Management Strategy (part of TDS or Acquisition Strategy)	Section 2320 of Reference (k)	MS A MS B MS C Full-Rate Production DR (or equivalent)
Market Research	Section 2377 of Reference (k) Paragraph (e)(2) of Section 644 of Reference (y)	During User Needs and Technology Opportunities MS A MS B
Military Equipment Valuation (part of Acquisition Strategy)	P.L. 101-576 (Reference (z)) SFFAS 6 (Reference (aa))	MS C Full-Rate Production DR (or equivalent)
Post Implementation Review	Paragraph (a)(5) of Section 1115 of title 31, U.S.C. (Reference (ab)) Section 11313 of Reference (v)	Full-Rate Production DR (or Full Deployment DR)
Program Deviation Report	MDAP–Section 2435 of Reference (k) MAIS–Section 11317 of Reference (v)	Immediately upon a program deviation
PESHE (Including National Environmental Policy Act (NEPA) / (Executive Order) E.O. 12114 Compliance Schedule)	Sections 4321-4347 of title 42, U.S.C. (Reference (ac)) E.O. 12114 (Reference (ad))	Program Initiation for Ships MS B MS C Full-Rate Production DR (or Full Deployment DR)
Submission of a DD Form 1494 and Certification of Spectrum Support (applicable to all systems/equipment that use the electromagnetic spectrum while operating in the U.S. and its possessions)	Sections 305 and 901-904 of title 47, U.S.C. (Reference (ae)) Section 104 of P.L. 102-538 (Reference (af)) Part 2 of Reference (c)	MS A MS B MS C
<b>The following requirements are statutory for MDAPs</b>		
Alternate LFT&E Plan (OSD LFT&E oversight programs with waiver from full-up, system-level testing only)	Section 2366 of Reference (k)	MS B (or as soon as practicable after program initiation)
Beyond-LRIP Report (or equivalent report for MDAPs that are also MAIS) (OSD OT&E oversight programs only)	Section 2399(b) of Reference (k)	Full-Rate Production DR
ICE <sup>2</sup>	Section 2434 of Reference (k)	MS A (Cost assessment when requested by the MDA) Program Initiation for Ships (cost assessment only) MS B MS C Full-Rate Production DR (as requested/directed by the MDA)
Industrial Base Capabilities Considerations (part of Acquisition Strategy)	Section 2440 of Reference (k)	MS B MS C
LFT&E Report (OSD LFT&E oversight programs only)	Section 2366 of Reference (k)	Full-Rate Production DR
LFT&E Waiver from Full-up, System-level Testing (OSD LFT&E oversight programs only)	Section 2366 of Reference (k)	MS B (or as soon as practicable after program initiation)
LRIP Quantities	Section 2400 of Reference (k)	MS B
Manpower Estimate (reviewed by the office of the Under Secretary of Defense for Personnel and Readiness (USD(P&R)))	Section 2434 of Reference (k)	Program Initiation for Ships MS B MS C Full-Rate Production DR

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MDA Program Certification	Section 2366a of Reference (k) Section 2366b of Reference (k) This Instruction	MS A MS B MS C (if Program Initiation)
Nunn-McCurdy Assessment and Certification	Section 2433 of Reference (k)	When a Service Secretary has reported an increase in cost that equals or exceeds the critical cost growth threshold
Replaced System Sustainment Plan	Section 2437 of Reference (k)	Program Initiation for Ships MS B
Selected Acquisition Report (SAR)– (This SAR requirement is not applicable to MDAPs that are also MAIS acquisition programs that report under section 2445c of Reference (k))	Section 2432 of Reference (k) Section 2445d of Reference (k)	<ul style="list-style-type: none"> <li>• Program initiation (normally Milestone B except for some ship programs) or MDAP designation</li> <li>• Annually for all programs and quarterly on an exception basis when there is (1) a six-month or more schedule slip in the current estimate since the prior SAR, or (2) a unit cost increase of 15% or more to the current APB objective or 30% or more to the original APB objective</li> <li>• SAR rebaselining after a major milestone decision (i.e., Milestone C or Milestones B and C for some ship programs)</li> <li>• SAR reporting requirement ceases after 90% of items are delivered or 90% of funds are expended</li> </ul>
Unit Cost Report	Section 2433 of Reference (k)	Quarterly
<b>The following requirements are statutory for MDAPs and are applicable to MAIS acquisition programs by this Instruction</b>		
APB	Section 2435 of Reference (k)	Program Initiation for Ships MS B MS C (updated, as necessary) Full-Rate Production DR (or Full Deployment DR)
Operational Test Plan (OSD OT&E oversight programs only)	Section 2399 of Reference (k)	Prior to start of operational test and evaluation
TDS	Section 803 of Reference (g)	MS A
<b>The following requirements are statutory for MAIS acquisition programs</b>		
Assessment and Certification of a Critical Change to the Defense Committees <sup>3</sup>	Section 2445c of Reference (k) This Instruction	Not later than 60 days after receiving a MAIS Quarterly Report indicating a Critical Change <sup>4/5</sup>
Defense Business Systems Management Committee (DBSMC) certification approval for defense business system modernizations	Section 2222 of Reference (k)	Prior to obligation of funds on defense business system modernizations
DoD CIO Confirmation of CCA Compliance (See Enclosure 5)	Section 811 of P.L. 106-398 (Reference (ag)) This Instruction	MS A MS B MS C (if Program Initiation or if equivalent to Full Deployment DR) Full Deployment DR
Economic Analysis	Section 811 of Reference (ag)	MS A (may be combined with AoA) MS B (or equivalent) Full Deployment DR (or equivalent)

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MAIS Annual Report to Congress	Section 2445b of Reference (k)	<ul style="list-style-type: none"> <li>▪ Annually after the first occurrence of any of the following events:               <ul style="list-style-type: none"> <li>- MDA designation,</li> <li>- MS A, or</li> <li>- MS B</li> </ul> </li> <li>▪ Due 45 days after the President's Budget is submitted to Congress</li> </ul>
Notice of MAIS Cancellation or Significant Reduction in Scope	Section 806 of P.L. 109-163 (Reference (ah))	60 days prior to an MDA decision to cancel or significantly reduce the scope of a fielded or post-MS C MAIS program
Notification of a Significant Change to the Defense Committees <sup>3</sup>	Section 2445c of Reference (k) This Instruction	Not later than 45 days after receiving a MAIS Quarterly Report indicating a Significant Change <sup>4/5</sup>
MAIS Quarterly Report <sup>6</sup>	Section 2445c of Reference (k)	Quarterly following initial submission of a MAIS Annual Report

Notes:

1. Core Logistics Analysis/Source of Repair Analysis shall be addressed in the LCSP.
2. For ACAT ID programs, the OSD CAIG prepares the ICE. For ACAT IC programs, the appropriate Service Cost Center or Defense Agency equivalent prepares the ICE.
3. Service Acquisition Executives (SAEs) shall obtain the ASD(NII)/DoD CIO's coordination on Significant and Critical Change reports before submitting them to the congressional defense committees when (a) the ASD(NII)/DoD CIO is the MDA for the program, or (b) the MAIS is an ACAT IAC program that is not under the direct authority of the USD(AT&L). SAEs shall obtain the USD(AT&L)'s coordination on Significant and Critical Change reports before submitting them to the congressional defense committees when the MAIS is under the direct authority of the USD(AT&L).
4. Section 2445c of Reference (k) defines a Significant Change as either a schedule change that will cause a delay of more than 6 months but less than a year; an increase in the estimated development cost or full life-cycle cost for the program of at least 15 percent, but less than 25 percent; or a significant, adverse change in the expected performance of the MAIS to be acquired. A Critical Change occurs when the system has failed to achieve IOC within 5 years after funds were first obligated for the program<sup>7</sup>; a schedule change will cause a delay of 1 year or more; the estimated development cost or full life-cycle cost for the program has increased 25 percent or more; or a change in expected performance will undermine the ability of the system to perform the functions anticipated.
5. Although the 45 days for submitting a Significant Change notification and the 60 days for conducting and submitting a Critical Change assessment and certification start from the day the Senior Official receives the MAIS Quarterly Report, no submission to the congressional defense committees is required unless the Senior Official determines that such a change has occurred based on the MAIS Quarterly Report.
6. This written report shall identify any variance in the projected development schedule, implementation schedule, life-cycle costs, or key performance parameters for the MAIS from such information as originally submitted in the first MAIS Annual Report to Congress for this program.
7. For MAIS programs that submitted a MAIS Annual Report to Congress in 2008, the Critical Change criterion to achieve IOC within 5 years has already been established in accordance with the then-applicable law.

Table 2-2. Statutory Requirements Applicable to  
ACAT II and Below Acquisition Programs (unless otherwise noted).

<b>INFORMATION REQUIRED</b>	<b>APPLICABLE STATUTE</b>	<b>WHEN REQUIRED</b>
AoA (All Information Systems –including NSS)	Subtitle III of Reference (v)	MS A MS B (updated as necessary) MS C (updated as necessary)
Alternate LFT&E Plan (OSD LFT&E oversight programs with waiver from full-up, system-level testing only)	Section 2366 of Reference (k)	MS B (or as soon as practicable after program initiation)
Benefit Analysis and Determination (applicable to bundled acquisitions only) (part of Acquisition Strategy)	Paragraph (e) of Section 644 of Reference (y)	MS B MS C (if no MS B)
CCA Compliance (All IT–including NSS) (See Enclosure 5)	Subtitle III of Reference (v)	MS A Program Initiation for Ships MS B MS C Full-Rate Production (or Full Deployment DR) (or equivalent)
Cooperative Opportunities (part of TDS at MS A; part of Acquisition Strategy thereafter)	Paragraph (e) of Section 2350a of Reference (k)	MS A MS B MS C
Competition Analysis (Depot-level Maintenance \$3M rule) (part of Acquisition Strategy)	Section 2469 of Reference (k)	MS B MS C (if no MS B)
Consideration of Technology Issues (ACAT II only)	Paragraph (b)(5) of Section 2364 of Reference (k)	MS A MS B MS C
Core Logistics Analysis/Source of Repair Analysis (part of Acquisition Strategy)	Section 2464 of Reference (k) Section 2466 of Reference (k)	MS B MS C (if no MS B)
Data Management Strategy (ACAT II only; part of Acquisition Strategy)	Section 2320 of Reference (k)	MS B MS C Full-Rate Production DR (or equivalent)
DBSMC certification approval for defense business system modernizations in excess of \$1M	Section 2222 of Reference (k)	Prior to obligation of funds on defense business system modernizations
IOT&E Completed (only conventional weapons systems that are major systems under section 2302(5) of Reference (k) for use in combat)	Paragraph (a) of Section 2399 of Reference (k)	Full-Rate Production
LFT&E Report (OSD LFT&E oversight programs only)	Section 2366 of Reference (k)	Full-Rate Production DR
LFT&E Waiver from Full-up, System-level Testing (OSD LFT&E oversight programs only)	Section 2366 of Reference (k)	MS B (or as soon as practicable after program initiation)
LRIP Quantities (ACAT II only)	Section 2400 of Reference (k)	MS B
Market Research	Section 2377 of Reference (k) Paragraph (e)(2) of Section 644 of Reference (y)	During User Needs and Technology Opportunities MS A MS B
Military Equipment Valuation (part of Acquisition Strategy)	Reference (z) Reference (aa)	MS C Full-Rate Production DR (or equivalent)
Operational Test Plan (OSD OT&E oversight programs only)	Section 2399 of Reference (k)	Prior to start of operational test and evaluation

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Post Implementation Review	Section 1115(a)(5) of Reference (ab) Section 11313 of Reference (v)	Full-Rate Production DR (or Full Deployment DR)
PESHE (Including NEPA/E.O. 12114 Compliance Schedule)	Sections 4321-4347 of Reference (ac) Reference (ad)	Program Initiation for Ships MS B MS C Full-Rate Production DR (or Full Deployment DR)
Submission of a DD Form 1494 and Certification of Spectrum Support (applicable to all systems/equipment that use the electromagnetic spectrum while operating in the U.S. and its possessions)	Sections 305 and 901-904 of Reference (ae) Section 104 of Reference (af) Part 2 of Reference (c)	MS A MS B MS C

Table 3. Regulatory Requirements Applicable to All Acquisition Programs  
(unless otherwise noted).

Regulatory policy applicable to Acquisitions of Services is discussed in Enclosure 9. Information requirements stated in this table do not apply to these acquisitions unless specifically addressed in Enclosure 9.

INFORMATION REQUIRED	SOURCE	WHEN REQUIRED
Acquisition Information Assurance Strategy (All IT—including NSS)	DoDI 8580.1 (Reference (ai)) This Instruction	MS A MS B MS C Full-Rate Production DR (or Full Deployment DR)
Acquisition Strategy	This Instruction	Program Initiation for Ships MS B MS C Full-Rate Production DR (or Full Deployment DR)
ADM	This Instruction	Program Initiation for Ships MS A MS B MS C Each Review
Affordability Assessment	This Instruction	MS B MS C
AoA	This Instruction	MS A MS B (updated as necessary) MS C (updated as necessary) Full Deployment DR (for AIS)
AoA Study Guidance	This Instruction	Materiel Development Decision (updated as necessary)
AoA Study Plan	This Instruction	Immediately following the Materiel Development Decision consistent with MDA Direction (updated as necessary)
APB	This Instruction	Program Initiation for Ships MS B MS C (updated, as necessary) Full-Rate Production DR (or Full Deployment DR)
CDD	Reference (h)	Program Initiation for Ships MS B
CIO Confirmation of CCA Compliance (See Enclosure 5)	This Instruction	MS A Program Initiation for Ships MS B MS C (if Program Initiation or if equivalent to Full Deployment DR) Full-Rate Production (or Full Deployment) DR
Component LFT&E Report (OSD LFT&E oversight programs only)	This Instruction	Completion of Live Fire Test and Evaluation

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Cost Analysis Requirements Description (CARD) (MDAPs and MAIS acquisition programs only) (CARDS shall be prepared according to the procedures specified in Enclosure 7 of this Instruction)	This Instruction	For MDAPs - Program Initiation for Ships - MS B - MS C - Full-Rate Production DR For MAIS - Any time an Economic Analysis is required—either by statute or by the MDA
Corrosion Prevention Control Plan (part of Acquisition Strategy) (ACAT I only)	DoDI 5000.67 (Reference (aj)) This Instruction	MS B MS C
CPD	Reference (h)	MS C
Defense Acquisition Executive Summary (MDAPs and MAIS only)	This Instruction	Quarterly Upon POM or BES submission Upon unit cost breach
DoD Component Cost Estimate (mandatory for MAIS; as required by CAE for MDAP)	This Instruction	MS A For MDAPs - Program Initiation for Ships - MS B - Full-Rate Production DR For MAIS - Any time an Economic Analysis is required—either by statute or by the MDA
Exit Criteria	This Instruction	Program Initiation for Ships MS A MS B MS C Each Review
ICD	Reference (h)	Materiel Development Decision MS A MS B MS C (if Program Initiation)
Independent Technology Readiness Assessment (ACAT ID only) (if required by the office of the Director, Defense Research and Engineering)	This Instruction	MS B MS C
Information Support Plan (ISP) (All IT—including NSS)	DoD Directive 4630.05 (Reference (ak)) DoD Instruction 4630.8 (Reference (al))	Program Initiation for Ships (Initial ISP) MS B (Initial ISP) CDR (Revised ISP) (unless waived) MS C (ISP of Record)
IT and NSS Joint Interoperability Test Certification (All IT—including NSS)	Chairman of the Joint Chiefs of Staff Manual 3170.01 (Reference (am)) CJCSI 6212.01 (Reference (an)) Reference (ak)	Full-Rate Production DR (or Full Deployment DR)
IUID Implementation Plan	DoD Instruction 8320.04 (Reference (ao))	MS A (summarized in SEP) MS B (annex to SEP) MS C (annex to SEP)
LCSP (part of Acquisition Strategy)	This Instruction	MS B MS C Full-Rate Production DR
Life-Cycle Signature Support Plan	DoD Directive 5250.01 (Reference (ap))	MS A (summarized in TDS) Program Initiation for Ships MS B MS C (updated as necessary)

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Net-Centric Data Strategy (Approach summarized in TDS and detailed in ISP)	Reference (l)	MS A Program Initiation for Ships MS B MS C
Operational Test Agency Report of Operational Test and Evaluation Results	This Instruction	MS B MS C Full-Rate Production DR
PDR Report	This Instruction	MS B Post-PDR Assessment if PDR is conducted after MS B
Post-CDR Report	This Instruction	Post-CDR Assessment
Program Deviation Report	This Instruction	Immediately upon a program deviation
Program Protection Plan (PPP) (for programs with critical program information) (includes Anti-Tamper Annex) (also summarized in the Acquisition Strategy)	Reference (m)	MS A (CPI stated in TDS) MS B MS C
Spectrum Supportability Determination (applicable to all systems/equipment that use the electromagnetic spectrum in the U.S. and in other host nations)	DoD Directive 4650.1, Reference (aq)	MS B MS C
System Threat Assessment Report (STAR) - validated by Defense Intelligence Agency (DIA) for ACAT ID programs - validated by DoD Components for ACAT IC programs - Programs on the DOT&E Oversight List require a STAR regardless of ACAT designation (MAIS programs use the DIA validated Information Operations Capstone Threat Assessment)	This Instruction DoD Directive 5105.21 (Reference (ar)) Reference (q) DIA Instruction 5000.002 (Reference (as))	Program Initiation for Ships MS B MS C
System Threat Assessment (STA) - validated by DoD Components for ACAT II programs (AIS programs may use the DIA validated Information Operations Capstone Threat Assessment)	This Instruction Reference (ar) Reference (q) Reference (as)	MS B MS C
Systems Engineering Plan	This Instruction	MS A MS B MS C
TDS (ACAT II and below)	This Instruction	MS A
Technology Readiness Assessment	This Instruction	Program Initiation for Ships (preliminary assessment) MS B MS C
TEMP	This Instruction	MS B MS C (update, if necessary) Full-Rate Production DR (or Full Deployment DR)
TES	This Instruction	MS A

Table 4. Regulatory Contract Reporting Requirements.

REQUIRED REPORT	SOURCE	WHEN REQUIRED
Contractor Cost Data Report (CCDR)	DoD 5000.04-M-1 (Reference (at)) This Instruction	<ul style="list-style-type: none"> <li>• All major contracts<sup>1</sup> and subcontracts, regardless of contract type, for ACAT I and IA programs and pre-MDAP and pre-MAIS programs subsequent to Milestone A approval, valued at more than \$50<sup>2</sup> million (then-year dollars)</li> <li>• Not required for contracts priced below \$20 million (then-year dollars)</li> <li>• The CCDR requirement on high-risk or high-technical-interest contracts priced between \$20 and \$50 million is left to the discretion of the DoD PM with approval by the Chair, CAIG</li> <li>• Not required under the following conditions provided the DoD PM requests and obtains approval for a reporting waiver from the Chair, CAIG: procurement of commercial systems, or for non-commercial systems bought under competitively awarded, firm fixed-price contracts, as long as competitive conditions continue to exist.</li> </ul>
Software Resources Data Report (SRDR)	Reference (at) This Instruction	<ul style="list-style-type: none"> <li>• All major contracts and subcontracts, regardless of contract type, for contractors developing/producing software elements within ACAT I and IA programs and pre-MDAP and pre-MAIS programs subsequent to Milestone A approval for any software development element with a projected software effort greater than \$20M (then-year dollars).</li> <li>• The SRDR requirement on high-risk or high-technical-interest contracts priced below \$20 million is left to the discretion of the DoD PM with approval by the Chair, CAIG.</li> </ul>
<p>Notes:</p> <p>1. For CSDR purposes, the term "contract" (or "subcontract") may refer to the entire standalone contract, to a specific task/delivery order, to a series of task/delivery orders, to a contract line item number, or to a series of line item numbers within a contract. The intent is to capture data on contractual efforts necessary for cost estimating purposes irrespective of the particular contract vehicle used.</p> <p>2. For CSDR purposes, contract value shall represent the estimated price at contract completion (i.e., initial contract award plus all expected authorized contract changes) and be based on the assumption that all contract options shall be exercised.</p>		

3. Table 5 contains Earned Value Management (EVM) implementation policy. Reference (f) and the DoD Earned Value Management Implementation Guide (Reference (au)) contain supporting information.

Table 5. EVM Implementation Policy.

REQUIREMENTS	SOURCE	WHEN REQUIRED
<b>For Cost/Incentive Contracts<sup>1</sup> ≥ \$50 Million<sup>2</sup></b> <ul style="list-style-type: none"> <li>• Compliance with EVM system guidelines in ANSI/EIA-748<sup>3</sup></li> <li>• EVM system formally validated and accepted by cognizant contracting officer</li> <li>• Contract Performance Report (DI-MGMT-81466A)</li> <li>• Integrated Master Schedule (DI-MGMT-81650)</li> <li>• Integrated Baseline Reviews</li> </ul>	Part 7 of Reference (c) This Instruction	At contract award and throughout contract performance At contract award and throughout contract performance Monthly Monthly Within 180 days after contract award, exercise of options, and major modifications
<b>For Cost/Incentive Contracts<sup>1</sup> ≥ \$20 Million<sup>2</sup> but &lt; \$50 Million<sup>2</sup></b> <ul style="list-style-type: none"> <li>• Compliance with EVM system guidelines in ANSI/EIA-748<sup>3</sup> (no formal EVM system validation)</li> <li>• Contract Performance Report (DI-MGMT-81466A) (tailoring recommended)</li> <li>• Integrated Master Schedule (DI-MGMT-81650) (tailoring recommended)</li> <li>• Integrated Baseline Reviews</li> </ul>	Part 7 of Reference (c) This Instruction	At contract award and throughout contract performance Monthly Monthly Within 180 days after contract award, exercise of options, and major modifications
<b>For Cost/Incentive Contracts<sup>1</sup> &lt; \$20 Million<sup>2</sup></b>	Part 7 of Reference (c) This Instruction	At the discretion of the PM based on cost-benefit analysis
<b>For Firm Fixed-Price Contracts<sup>1</sup> regardless of dollar value</b>	Part 7 of Reference (c) This Instruction	Limited Use—must be approved by the MDA based on a business case analysis
Notes: 1. The term, "Contracts," includes contracts, subcontracts, intra-government work agreements, and other agreements. "Incentive" contracts include fixed-price incentive. 2. Application thresholds are in then-year dollars. 3. ANSI/EIA-748 = American National Standards Institute/Electronic Industries Alliance Standard 748, Earned Value Management Systems (Reference (av)).		

4. The APB is an important document for program management and shall reflect the approved program being executed. It is the "Baseline Description" of the program and shall include sufficient parameters to describe the cost estimate (also referred to as the "Baseline Estimate" for MDAPs in section 2433 of Reference (k)), schedule, performance, supportability, and other relevant factors. An APB is required for all programs by paragraph 4.3.4 in Reference (b) and Table 2-1 of this Instruction. For MDAPs, sections 2433 and 2435 of Reference (k) provide specific requirements for unit cost reports and baseline descriptions. Table 6 contains statutory and regulatory APB policy.

Table 6. APB Policy.

<p><b>Original Baseline Description or Original APB</b></p>	<ul style="list-style-type: none"> <li>• The first APB approved by the MDA prior to a program entering EMD, or at program initiation, whichever occurs later</li> <li>• Serves as the current baseline description until a revised APB is prepared</li> <li>• Incorporates the KPPs verbatim from the CDD or CPD (if program initiation is at MS C)</li> <li>• The cost estimate parameter may be revised under section 2435 of Reference (k) only if a breach occurs that exceeds the critical cost growth threshold for the program under section 2433 of Reference (k) (Applicable to MDAPs only)</li> </ul>
<p><b>Current Baseline Description or Current APB</b></p>	<ul style="list-style-type: none"> <li>• May be revised only:             <ul style="list-style-type: none"> <li>▪ at milestone and full-rate production decisions;</li> <li>▪ as result of a major program restructure that is fully funded and approved by the MDA; or</li> <li>▪ as a result of a program deviation (breach), if the MDA determines that the breach is primarily the result of an external cause beyond control of the PM</li> </ul> </li> <li>• Circumstances authorizing changes are limited and revision to the current baseline estimate (i.e., the cost estimate) or other APB parameters is not automatically authorized if there is a change to cost, schedule, or performance parameters</li> <li>• Multiple revisions to the current APB will not be authorized</li> <li>• In no event will a revision to the current APB be authorized if proposed merely to avoid a reportable breach</li> <li>• The MDA determines whether to revise the APB</li> </ul>
<p><b>Significant Nunn-McCurdy Unit Cost Breaches</b></p> <p>Applicable to MDAPs only</p>	<ul style="list-style-type: none"> <li>• The cost growth threshold, as it relates to the current APB, is defined in section 2433 of Reference (k) to be an increase of at least 15 percent over the Program Acquisition Unit Cost (PAUC) or Average Procurement Unit Cost (APUC) for the current program as shown in the current Baseline Estimate</li> <li>• The cost growth threshold, as it relates to the original APB, is defined in section 2433 of Reference (k) to be an increase of at least 30 percent over the PAUC or APUC for the original program as shown in the original Baseline Estimate</li> <li>• Only the current APB shall be revised</li> </ul>
<p><b>Critical Nunn-McCurdy Unit Cost Breaches</b></p> <p>Applicable to MDAPs only</p>	<ul style="list-style-type: none"> <li>• The cost growth threshold, as it relates to the current APB, is defined in section 2433 of Reference (k) to be an increase of at least 25 percent over the current PAUC or current APUC for the current program as shown in the current Baseline Estimate</li> <li>• The cost growth threshold, as it relates to the original APB, is defined in section 2433 of Reference (k) to be an increase of at least 50 percent over the original PAUC or original APUC for the original program as shown in the original Baseline Estimate</li> <li>• Both the current and original APBs shall be revised to form a single “new original” APB that reflects the Nunn-McCurdy certification approved by the MDA</li> </ul>
<p><b>Deviations</b></p>	<ul style="list-style-type: none"> <li>• Revising the current APB at milestone decisions and at full-rate production serves to update cost and schedule parameters based on knowledge developed during the current phase of the program</li> <li>• The PM shall immediately notify the MDA of a deviation from any parameter (cost, schedule, performance, etc.)</li> <li>• Within 30 days of occurrence of the deviation, the PM shall inform the MDA of the reason for the deviation and planned actions</li> <li>• Within 90 days of occurrence of the deviation             <ul style="list-style-type: none"> <li>▪ A proposed revised APB shall be submitted for approval; or</li> <li>▪ An OIPT or equivalent Component-level review shall be held to review the program</li> </ul> </li> <li>• The MDA shall decide based on above criteria whether it is appropriate to approve a revision to an APB</li> </ul>
<p><b>MAIS Significant and Critical Program Changes</b></p>	<ul style="list-style-type: none"> <li>• Definitions provided in Table 2-1, Note 4</li> </ul>

Table 7. Unique Decision Forums.

<b>PROGRAM CATEGORY</b>	<b>DECISION FORUM</b>	<b>APPLICABLE POLICY</b>
Space Programs	Defense Space Acquisition Board	NSSAP 03-01 (Reference (aw))
Joint Intelligence Programs	Joint Intelligence Acquisition Board	ICD 105 (Reference (ax)) Reference (d)
Missile Defense Programs	Missile Defense Executive Board	USD(AT&L) Memo, "Ballistic Missile Defense Program Implementation Guidance" (Reference (ay))

*DoDI 5000.02, December 8, 2008*

ENCLOSURE 5

IT CONSIDERATIONS

1. CLINGER-COHEN ACT (CCA) COMPLIANCE. Subtitle III of Reference (v) (formerly known as Division E of CCA) (hereinafter referred to as "Title 40/CCA") applies to all IT investments, including NSS.

a. For all programs that acquire IT, including an NSS, at any ACAT level, the MDA shall not initiate a program or an increment of a program, or approve entry into any phase of the acquisition process; and the DoD Component shall not award a contract until:

(1) The sponsoring DoD Component or PM has satisfied the requirements of Title 40/CCA;

(2) The DoD Component CIO, or designee, confirms Title 40/CCA compliance; and

(3) For MDAPs and MAIS programs only, the DoD CIO also confirms Title 40/CCA compliance.

b. The Title 40/CCA requirements identified in Table 8 of this enclosure shall be satisfied to the maximum extent practicable through documentation developed under the JCIDS and the Defense Acquisition System. The DoD Component Requirements Authority, in conjunction with the Acquisition Community, is accountable for actions 1-5 in Table 8; the PM is accountable for actions 6-11. The PM shall prepare a table similar to Table 8 to indicate which documents (including page and paragraph) correspond to the Title 40/CCA requirements. CIOs shall use the documents cited in the table prepared by the PM to assess and confirm Title 40/CCA compliance.

c. The OIPT shall resolve issues related to compliance for MAIS programs and MDAPs. The Investment Review Board (IRB) shall resolve issues related to compliance for MAIS and MDAP defense business systems. Reference (f) has more information supporting Title 40/CCA compliance.

2. TIME-CERTAIN ACQUISITION OF AN IT BUSINESS SYSTEM. Before providing Milestone A approval for an IT business system, the MDA shall determine that the system will achieve IOC within five years (section 811 of P.L. 109-364 (Reference (az))). This MDA determination is not required for NSS, but is required for AIS defense business systems, including those that are also MAIS or MDAP.

3. DEFENSE BUSINESS SYSTEMS MANAGEMENT COMMITTEE (DBSMC) CERTIFICATION APPROVAL. For defense business system acquisition programs that have modernization funding exceeding \$1,000,000, the MDA shall not grant any milestone or full-rate production approval or their equivalent, and the authority to obligate funding shall not be granted

until the certification under paragraph (a) of section 2222 of Reference (k) has been approved by the DBSMC (see Enclosure 11).

Table 8. Title 40/CCA Compliance.

<b>Actions Required to Comply With Subtitle III/CCA (Reference (v))</b>	<b>Applicable Program Documentation<sup>1</sup></b>
1. Make a determination that the acquisition supports core, priority functions of the Department. <sup>2</sup>	ICD Approval
2. Establish outcome-based performance measures linked to strategic goals. <sup>2,3</sup>	ICD, CDD, CPD and APB approval
3. Redesign the processes that the system supports to reduce costs, improve effectiveness and maximize the use of COTS technology. <sup>2,3</sup>	Approval of the ICD, Concept of Operations, AoA, CDD, and CPD
4. Determine that no Private Sector or Government source can better support the function. <sup>4</sup>	Acquisition Strategy page XX, para XX AoA page XX
5. Conduct an analysis of alternatives. <sup>3,4</sup>	AoA
6. Conduct an economic analysis that includes a calculation of the return on investment; or for non-AIS programs, conduct a Life-Cycle Cost Estimate (LCCE). <sup>3,4</sup>	Program LCCE Program Economic Analysis for MAIS
7. Develop clearly established measures and accountability for program progress.	Acquisition Strategy page XX APB
8. Ensure that the acquisition is consistent with the Global Information Grid policies and architecture, to include relevant standards.	APB (Net-Ready KPP) ISP (Information Exchange Requirements)
9. Ensure that the program has an information assurance strategy that is consistent with DoD policies, standards and architectures, to include relevant standards. <sup>3</sup>	Acquisition Information Assurance Strategy
10. Ensure, to the maximum extent practicable, (1) modular contracting has been used, and (2) the program is being implemented in phased, successive increments, each of which meets part of the mission need and delivers measurable benefit, independent of future increments.	Acquisition Strategy page XX
11. Register Mission-Critical and Mission-Essential systems with the DoD CIO. <sup>3,5</sup>	DoD IT Portfolio Repository
<p>1. The system documents/information cited are examples of the most likely but not the only references for the required information. If other references are more appropriate, they may be used in addition to or instead of those cited. Include page(s) and paragraph(s), where appropriate.</p> <p>2. These requirements are presumed to be satisfied for Weapons Systems with embedded IT and for Command and Control Systems that are not themselves IT systems.</p> <p>3. These actions are also required to comply with section 811 of Reference (ag).</p> <p>4. For NSS, these requirements apply to the extent practicable (section 11103 of Reference (v))</p> <p>5. Definitions:</p> <p><b>Mission-Critical Information System.</b> A system that meets the definitions of "information system" and "national security system" in the CCA (Reference (v)), the loss of which would cause the stoppage of warfighter operations or direct mission support of warfighter operations. (The designation of mission critical shall be made by a Component Head, a Combatant Commander, or their designee. A financial management IT system shall be considered a mission-critical IT system as defined by the Under Secretary of Defense (Comptroller) (USD(C)).) A "Mission-Critical Information Technology System" has the same meaning as a "Mission-Critical Information System."</p> <p><b>Mission-Essential Information System.</b> A system that meets the definition of "information system" in Reference (v), that the acquiring Component Head or designee determines is basic and necessary for the accomplishment of the organizational mission. (The designation of mission-essential shall be made by a Component Head, a Combatant Commander, or their designee. A financial management IT system shall be considered a mission-essential IT system as defined by the USD(C).) A "Mission-Essential Information Technology System" has the same meaning as a "Mission-Essential Information System."</p>	

4. MAIS CANCELLATION OR SIGNIFICANT REDUCTION IN SCOPE. As required by section 806 of Reference (ah), the DoD CIO shall notify the congressional defense committees at least 60 days before any MDA cancels or significantly reduces the scope of a MAIS program that has been fielded or has received Milestone C approval.
5. LIMITED DEPLOYMENT FOR A MAIS ACQUISITION PROGRAM. At Milestone C, the MDA for a MAIS acquisition program shall approve, in coordination with DOT&E, the quantity and location of sites for a limited deployment of the system for IOT&E.
6. DoD ENTERPRISE SOFTWARE INITIATIVE. When the use of commercial IT is considered viable, maximum use of and coordination with the DoD Enterprise Software Initiative shall be made.

ENCLOSURE 6

INTEGRATED T&E

1. OVERVIEW

a. The fundamental purpose of T&E is to provide knowledge to assist in managing the risks involved in developing, producing, operating, and sustaining systems and capabilities. T&E measures progress in both system and capability development. T&E provides knowledge of system capabilities and limitations to the acquisition community for use in improving the system performance, and the user community for optimizing system use in operations. T&E expertise must be brought to bear at the beginning of the system life cycle to provide earlier learning about the strengths and weaknesses of the system under development. The goal is early identification of technical, operational, and system deficiencies, so that appropriate and timely corrective actions can be developed prior to fielding the system.

b. The PM, in concert with the user and the T&E community, shall coordinate DT&E, OT&E, LFT&E, family-of-systems interoperability testing, information assurance testing, and modeling and simulation (M&S) activities, into an efficient continuum, closely integrated with requirements definition and systems design and development. The T&E strategy shall provide information about risk and risk mitigation, provide empirical data to validate models and simulations, evaluate technical performance and system maturity, and determine whether systems are operationally effective, suitable, and survivable against the threat detailed in the STAR or STA. The T&E strategy shall also address development and assessment of the weapons support equipment during the EMD Phase, and into production, to ensure satisfactory test system measurement performance, calibration traceability and support, required diagnostics, and safety. Adequate time and resources shall be planned to support pre-test predictions and post-test reconciliation of models and test results, for all major test events. The PM, in concert with the user and the T&E community, shall provide safety releases (to include formal Environment, Safety, and Occupational Health (ESOH) risk acceptance in accordance with Section 6 of Enclosure 12) to the developmental and operational testers prior to any test using personnel.

c. The PM shall design DT&E objectives appropriate to each phase and milestone of an acquisition program. Testing shall be event-driven and monitored by the use of success criteria within each phase, OT&E entrance criteria, and other metrics designed to measure progress and support the decision process. The OTA and the PM shall collaboratively design OT&E objectives appropriate to each phase and milestone of a program, and these objectives shall be included in the TEMP. Completed IOT&E and completed LFT&E shall support a beyond-LRIP decision for ACAT I and II programs for conventional weapons systems designed for use in combat. For this purpose, OT&E shall require more than an OA that was based exclusively on computer modeling, simulation, or an analysis of system requirements, engineering proposals, design specifications, or any other information contained in program documents (sections 2399 and 2366 of Reference (k)).

d. Systems that provide capabilities for joint missions shall be tested in the expected joint operational environment.

## 2. T&E PLANNING

a. Test and Evaluation Strategy (TES). At Milestone A, the PM shall submit a TES that describes the overall test approach for integrating developmental, operational, and live-fire test and evaluation and addresses test resource planning. The TES shall include a test plan that addresses Technology Development phase activity, including the identification and management of technology risk, and the evaluation of system design concepts against the preliminary mission requirements resulting from the AoA. Test planning shall address the T&E aspects of competitive prototyping, early demonstration of technologies in relevant environments, and the development of an integrated test approach. The Milestone A test plan shall rely on the ICD as the basis for the evaluation strategy. For programs on the OSD T&E Oversight List, the TES shall be submitted to the USD(AT&L) and the DOT&E for approval.

b. Test and Evaluation Master Plan (TEMP). The PMs for MDAPs, MAIS Acquisition Programs, and programs on the OSD T&E Oversight List shall submit a TEMP to the USD(AT&L) and the DOT&E for approval to support Milestones B and C and the Full-Rate Production decision. The TEMP shall describe planned developmental, operational, and live-fire testing, including measures to evaluate the performance of the system during these test periods; an integrated test schedule; and the resource requirements to accomplish the planned testing. The MDA or designee shall ensure that IOT&E entrance criteria, to be used to determine IOT&E readiness certification in support of each planned operational test, are developed and documented in the TEMP.

### c. Planning Requirements

(1) Planning shall provide for completed DT&E, IOT&E, and LFT&E, as required, before entering full-rate production.

(2) Test planning for commercial and non-developmental items shall recognize commercial testing and experience, but nonetheless determine the appropriate DT&E, OT&E, and LFT&E needed to ensure effective performance in the intended operational environment.

(3) Test planning and conduct shall take full advantage of existing investment in DoD ranges, facilities, and other resources. Embedded instrumentation shall be designed and developed to facilitate training, logistics support, and combat data collection.

(4) Planning shall consider the potential testing impacts on the environment (sections 4321-4347 of Reference (ac) and Reference (ad)).

(5) The concept of early and integrated T&E shall emphasize prototype testing during EMD and early OAs to identify technology risks and provide operational user impacts.

(6) Appropriate use of accredited models and simulation shall support DT&E, IOT&E, and LFT&E.

(7) The DOT&E and the Director, SSE, shall have full and timely access to all available developmental, operational, and live-fire T&E data, records, and reports.

(8) Interoperability Testing: All DoD MDAPs, programs on the OSD T&E Oversight list, post-acquisition (legacy) systems, and all programs and systems that must interoperate, are subject to interoperability evaluations throughout their life cycles to validate their ability to support mission accomplishment. For IT systems (including NSS) with interoperability requirements, the Joint Interoperability Test Command (JITC), regardless of ACAT, shall provide system interoperability test certification memorandums to the Deputy Under Secretary of Defense (Acquisition and Technology) (DUSD(A&T)), the ASD(NII)/DoD CIO, and the Director, Joint Staff J-6, throughout the system life-cycle.

3. DT&E. During DT&E, the materiel developer shall:

- a. Identify the technical capabilities and limitations of the alternative concepts and design options under consideration;
- b. Identify and describe design technical risks;
- c. Stress the system under test to at least the limits of the Operational Mode Summary/Mission Profile, and, for some systems, beyond the normal operating limits to ensure the robustness of the design;
- d. Assess technical progress and maturity against critical technical parameters, to include interoperability, documented in the TEMP;
- e. Assess the safety of the system/item to ensure safety during OT and other troop-supported testing and to support success in meeting design safety criteria;
- f. Provide data and analytic support to the decision process to certify the system ready for IOT&E;
- g. Conduct information assurance testing on any system that collects, stores, transmits, or processes unclassified or classified information;
- h. In the case of IT systems, including NSS, support the DoD Information Assurance Certification and Accreditation Process and Joint Interoperability Certification process; and
- i. Prior to full-rate production, demonstrate the maturity of the production process through Production Qualification Testing of LRIP assets.

#### 4. READINESS FOR IOT&E

a. The DoD Components shall each establish an Operational Test Readiness Process for programs on the OSD T&E Oversight List, consistent with the following requirements:

(1) The process shall include a review of DT&E results; an assessment of the system's progress against critical technical parameters documented in the TEMP; an analysis of identified technical risks to verify that those risks have been retired during developmental testing; and a review of the IOT&E entrance criteria specified in the TEMP. Programs shall provide copies of the DT&E report and the progress assessment to USD(AT&L) and DOT&E.

(2) At each test readiness review, the PM shall ensure that the impact of deviations and waivers is considered in the decision to proceed to the next phase of testing.

b. The DUSD(A&T) shall conduct an independent Assessment of Operational Test Readiness (AOTR) for all ACAT ID and special interest programs designated by the USD(AT&L). Each AOTR shall consider the risks associated with the system's ability to meet operational suitability and effectiveness goals. This assessment shall be based on capabilities demonstrated in DT&E and OAs and criteria described in the TEMP. Where feasible, the AOTR shall be performed in conjunction with the program's review and reporting activities as described in subparagraph 4.a.(1) of this Enclosure. The AOTR report shall be provided to the USD(AT&L), DOT&E, and CAE.

c. The CAE shall consider the results of the AOTR prior to making a determination of materiel system readiness for IOT&E.

#### 5. OT&E

##### a. OT&E Requirements

(1) OT&E shall be used to determine the operational effectiveness and suitability of a system under realistic operational conditions, including joint combat operations; determine if thresholds in the approved CPD and critical operational issues have been satisfied; assess impacts to combat operations; and provide additional information on the system's operational capabilities.

(2) The lead OTA shall brief the DOT&E on concepts for an OT&E 120 days prior to start. They shall submit the OT&E plan 60 days prior, and shall report major revisions as they occur.

(3) Typical users shall operate and maintain the system or item under conditions simulating combat stress and peacetime conditions.

(4) The independent OTAs shall use production or production-representative articles for the dedicated phase of IOT&E that supports the full-rate production decision (or for ACAT IA or other acquisition programs, the full-deployment decision).

(5) Hardware and software alterations that materially change system performance, including system upgrades and changes to correct deficiencies, shall undergo OT&E.

(6) OTAs shall conduct an independent, dedicated phase of IOT&E before full-rate production to evaluate operational effectiveness and suitability, as required by section 2399 of Reference (k).

(7) All weapon, information, and Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance programs that depend on external information sources, or that provide information to other DoD systems, shall be tested and evaluated for information assurance.

(8) The DOT&E, following consultation with the PM, shall determine the quantity of articles procured for IOT&E for MDAPs; the cognizant OTA, following consultation with the PM, shall make this decision for non-MDAPs (section 2399 of Reference (k)).

(9) The DOT&E shall assess the adequacy of IOT&E and LFT&E and evaluate the operational effectiveness, suitability, and survivability, as applicable, of systems under DOT&E oversight. DOT&E-oversight programs beyond LRIP shall require continued DOT&E test plan approval, monitoring, and FOT&E reporting to:

- (a) Complete IOT&E activity;
- (b) Refine IOT&E estimates;
- (c) Verify correction of deficiencies;
- (d) Evaluate significant changes to system design or employment; and
- (e) Evaluate whether or not the system continues to meet operational needs and retain operational effectiveness in a substantially new environment, as appropriate.

b. OT&E Information Promulgation

(1) The responsible test organization shall release valid test data and factual information in as near-real-time as possible to all DoD organizations and contractors with a need to know. Data may be preliminary and shall be identified as such.

(2) To protect the integrity of the OTA evaluation process, release of evaluation results may be withheld until the final report, according to the established policies of each OTA. Nothing in this policy shall be interpreted as limiting the statutory requirement for immediate access to all OT&E results by DOT&E.

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(3) The primary intent of this policy is to give developing agencies visibility of factual data produced during OT&E, while not allowing the developmental agency any influence over the outcome of those evaluations.

c. Use of Contractors in Support of OT&E

(1) Per section 2399 of Reference (k), persons employed by the contractor for the system being developed may only participate in OT&E of MDAPs to the extent they are planned to be involved in the operation, maintenance, and other support of the system when deployed in combat.

(2) A contractor that has participated (or is participating) in the development, production, or testing of a system for a DoD Component (or for another contractor of the Department of Defense) may not be involved in any way in establishing criteria for data collection, performance assessment, or evaluation activities for OT&E.

(3) The DOT&E may waive the limitations in 5.c.(1) and 5.c.(2) of this enclosure if the DOT&E determines, in writing, that sufficient steps have been taken to ensure the impartiality of the contractor in providing the services. These limitations do not apply to a contractor that has participated in such development, production, or testing, solely in test or test support on behalf of the Department of Defense.

6. OSD T&E OVERSIGHT LIST

a. The DOT&E and the DUSD(A&T) shall jointly, and in consultation with the T&E executives of the cognizant DoD Components, determine the programs designated for OSD T&E oversight. The OSD memorandum, "Designation of Programs for OSD Test and Evaluation (T&E) Oversight" (Reference (bb)) will identify these programs.

b. Programs may be placed on the OSD T&E Oversight List in one or more of the following categories: developmental testing, operational testing, or live fire testing. Unless otherwise indicated, programs designated for operational and live-fire test and evaluation are to be considered MDAPs and covered programs subject to the provisions of sections 139, 2366, and 2399 of Reference (k) and the requirements of this Instruction, including the submission of T&E Strategies, DIA or DoD Component-validated STARs, TEMPs, Operational Test Plans, and reporting of test results.

c. Force protection equipment (including non-lethal weapons) will be identified as a separate category on the OSD T&E Oversight List. With respect to OT&E and/or survivability testing of such equipment, DOT&E will provide guidance to and consult with senior Defense officials to expedite suitable OT&E; provide objective subject-matter expertise; encourage data sharing between DoD Components; and facilitate the use of common test standards. The DOT&E will not delay deployment of, nor require approval of test plans for, such equipment (section 139 of Reference (k)). Force protection programs are not MDAPs unless they meet the requirements specified in sections 2430 and 2399 of Reference (k).

7. LFT&E. (Not applicable to ACAT IA programs.) Section 2366 of Reference (k) mandates LFT&E and formal LFT&E reporting for all covered systems. The DOT&E shall approve the LFT&E strategy for covered systems prior to Milestone B.

8. M&S. The PM shall plan for M&S throughout the acquisition life cycle. The PM shall identify and fund required M&S resources early in the life cycle.

9. FOREIGN COMPARATIVE TESTING (FCT). Paragraph (g) of section 2350a of Reference (k) prescribes funding for U.S. T&E of selected allied and friendly foreign countries' equipment and technologies when such items and technologies have potential to satisfy approved DoD requirements. The USD(AT&L) shall centrally manage FCT and notify the congressional defense committees of the intent to obligate funds made available to carry out FCT not less than 7 days before such funds are obligated.

10. TESTING INCREMENTS OF AN EVOLUTIONARY ACQUISITION PROGRAM. The structure of these test activities depends on the program acquisition strategy. In general, all programs shall:

- a. Provide for early involvement of the Service OTA/JITC in DT&E and test planning;
- b. Conduct adequate DT&E, LFT&E, and OT&E of the first and each successive increment of capability;
- c. Integrate, as appropriate, and without compromising the specific requirements of the different types of testing, successive periods of DT&E, LFT&E, and IOT&E;
- d. Tailor test content and reporting against earlier test results, evaluating at a minimum the increment of mission accomplishment and survivability required of the new increment, plus whether or not performance previously demonstrated by the previous increment has been degraded;
- e. For programs under OSD OT&E and/or LFT&E oversight, support DOT&E's intended schedule for reporting to the Secretary of Defense and congressional defense committees.

ENCLOSURE 7

RESOURCE ESTIMATION

1. CAIG INDEPENDENT LCCEs. The OSD CAIG shall prepare independent LCCEs per section 2434 of Reference (k). The CAIG shall provide the MDA with an independent LCCE at major decision points as specified in statute, and when directed by the MDA. The MDA shall consider the independent LCCE before approving entry into the EMD Phase or the Production and Deployment Phase. The CAIG shall also prepare an ICE for ACAT IC programs at the request of the USD(AT&L). A CAIG ICE is not required for ACAT IA programs. (DoD Directive 5000.04 (Reference (bc)))
  
2. CARD. For ACAT I and IA programs, the PM shall prepare, and an authority no lower than the DoD Component PEO shall approve, the CARD. DoD 5000.4-M (Reference (bd)) specifies CARD content. For joint programs, the CARD shall cover the common program as agreed to by all participating DoD Components, as well as any DoD Component-unique requirements. The teams preparing the DoD Component LCCE, the component cost analysis (if applicable) and the independent LCCE shall receive a draft CARD 180 days, and the final CARD 45 days, prior to a planned OIPT or DoD Component review, unless the OIPT leader agrees to other due dates. The PM shall synchronize preparation of the CARD with other program documents so that the final CARD is consistent with other final program documentation. At Milestone B, the program described in the final CARD(s) shall reflect the program definition achieved during the Technology Development Phase. If the PDR is conducted before Milestone B, the final CARD(s) at Milestone B shall reflect the results of the PDR.
  
3. COST REPORTING. Standardized cost data procedures and formats support credible cost estimates for current and future programs. Reference (bc) authorizes the CAIG Chair to establish procedural guidance for cost data collection and monitoring systems. Reference (at) identifies procedural and standard data formatting requirements for the CSDR system.
  - a. The two components of the CSDR system are the CCDR and SRDR. PMs shall use the CSDR system to report data on contractor costs and resource usage incurred in performing DoD programs. Proposed CSDR plan(s) for ACAT I programs shall be approved by the CAIG Chair prior to the issuance of a contract solicitation. The Chair, CAIG, may waive the information requirements of Table 4 in Enclosure 4.
  
  - b. On ACAT I programs, the sustainment contracts or organic Inter-/Intra-Service agreements (such as Memorandums of Understanding) shall provide tailored cost reporting that can facilitate future cost estimating and price analysis. If the logistics support falls under a performance-based life-cycle product support strategy, the contracts or organic agreements shall also include an agreed-to set of performance metrics that can be used to monitor performance.
  
4. CAIG PROCEDURES. The DoD Component responsible for acquisition of a system shall cooperate with the CAIG and provide the cost, programmatic, and technical information required

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for estimating costs and appraising cost risks. The DoD Component shall also facilitate CAIG staff visits to the program office, product centers, test centers, and system contractor(s). The process through which the ICE is prepared shall be consistent with the following policies (Reference (bd)):

- a. The CAIG shall participate in Integrated Product Team (IPT) meetings (Cost Working-level IPTs/OIPTs);
- b. The CAIG, DoD Components, and PM shall share data and models and use the same CARD;
- c. The CAIG, DoD Components, and PM shall raise and resolve issues in a timely manner and at the lowest possible level;
- d. The CAIG shall brief the preliminary, independent, LCCE to the PM 45 days before the OIPT, and the final estimate 21 days before the OIPT;
- e. The CAIG, DoD Component, and PM shall address differences between the independent LCCE and the DoD Component cost estimate; and
- f. The PM shall identify issues projected to be brought to the OIPT to the Chairman, CAIG, in a timely manner.
- g. For a joint program, the DoD Component's cost estimate shall be prepared by the lead DoD Component or Executive Agent.

5. ANALYSIS OF ALTERNATIVES PROCEDURES. For potential and designated ACAT I and IA programs, the DPA&E shall draft, for MDA approval, AoA study guidance for review at the Materiel Development Decision. Following approval, the guidance shall be issued to the DoD Component designated by the MDA, or for ACAT IA programs, to the office of the Principal Staff Assistant responsible for the mission area. The DoD Component or the Principal Staff Assistant shall designate responsibility for completion of the study plan and the AoA; neither of which may be assigned to the PM. The study plan shall be coordinated with the MDA and approved by the DPA&E prior to the start of the AoA. The final AoA shall be provided to the DPA&E not later than 60 days prior to the DAB or ITAB milestone reviews. The DPA&E shall evaluate the AoA and provide an assessment to the Head of the DoD Component or Principal Staff Assistant and to the MDA. In this evaluation, the DPA&E, in collaboration with the OSD and Joint Staff, shall assess the extent to which the AoA:

- a. Illuminated capability advantages and disadvantages;
- b. Considered joint operational plans;
- c. Examined sufficient feasible alternatives;

d. Discussed key assumptions and variables and sensitivity to changes in these;

e. Calculated costs; and,

f. Assessed the following:

(1) Technology risk and maturity;

(2) Alternative ways to improve the energy efficiency of DoD tactical systems with end items that create a demand for energy, consistent with mission requirements and cost effectiveness; and

(3) Appropriate system training to ensure that effective and efficient training is provided with the system.

6. ENERGY CONSIDERATIONS. The fully burdened cost of delivered energy shall be used in trade-off analyses conducted for all DoD tactical systems with end items that create a demand for energy.

ENCLOSURE 8

HUMAN SYSTEMS INTEGRATION (HSI)

1. GENERAL. The PM shall have a plan for HSI in place early in the acquisition process to optimize total system performance, minimize total ownership costs, and ensure that the system is built to accommodate the characteristics of the user population that will operate, maintain, and support the system.

2. HSI PLANNING. HSI planning shall be summarized in the Acquisition Strategy and SEP and shall address the following:

a. Human Factors Engineering. The PM shall take steps (e.g., contract deliverables and Government/contractor IPT teams) to ensure ergonomics, human factors engineering, and cognitive engineering is employed during systems engineering over the life of the program to provide for effective human-machine interfaces and to meet HSI requirements. Where practicable and cost effective, system designs shall minimize or eliminate system characteristics that require excessive cognitive, physical, or sensory skills; entail extensive training or workload-intensive tasks; result in mission-critical errors; or produce safety or health hazards.

b. Personnel. The PM shall work with the personnel community to define the human performance characteristics of the user population based on the system description, projected characteristics of target occupational specialties, and recruitment and retention trends. To the extent possible, systems shall not require special cognitive, physical, or sensory skills beyond that found in the specified user population. For those programs that have skill requirements that exceed the knowledge, skills, and abilities of current military occupational specialties, or that require additional skill indicators or hard-to-fill military occupational specialties, the PM shall consult with personnel communities to identify readiness, personnel tempo, and funding issues that impact program execution.

c. Habitability. The PM shall work with habitability representatives to establish requirements for the physical environment (e.g., adequate space and temperature control) and, if appropriate, requirements for personnel services (e.g., medical and mess) and living conditions (e.g., berthing and personal hygiene) for conditions that have a direct impact on meeting or sustaining system performance or that have such an adverse impact on quality of life and morale that recruitment or retention is degraded.

d. Manpower. In advance of contracting for operational support services, the PM shall work with the manpower community to determine the most efficient and cost-effective mix of DoD manpower and contract support. The mix of military, DoD civilian, and contract support necessary to operate, maintain, and support (to include providing training) the system shall be determined based on the Manpower Mix Criteria and reported in the Manpower Estimate. Economic analyses used to support workforce mix decisions shall use costing tools that account for fully loaded costs – i.e., all variable and fixed costs, compensation and non-compensation

costs, current and deferred benefits, cash and in-kind benefits. Once the Manpower Estimate is approved by the DoD Component manpower authority, it shall serve as the authoritative source for reporting manpower in other program documentation.

e. Training. The PM shall work with the training community to develop options for individual, collective, and joint training for operators, maintainers and support personnel, and, where appropriate, base training decisions on training effectiveness evaluations. The PM shall address the major elements of training, and place special emphasis on options that enhance user capabilities, maintain skill proficiencies, and reduce individual and collective training costs. The PM shall develop training system plans to maximize the use of new learning techniques, simulation technology, embedded training and distributed learning (DoD Instruction 1322.26 (Reference (be))), and instrumentation systems that provide "anytime, anyplace" training and reduce the demand on the training establishment. Where possible, the PM shall maximize the use of simulation-supported embedded training, and the training systems shall fully support and mirror the interoperability of the operational system (DoD Directive 1322.18 (Reference (bf))).

f. Safety and Occupational Health. The PM shall ensure that appropriate HSI and ESOH efforts are integrated across disciplines and into systems engineering to determine system design characteristics that can minimize the risks of acute or chronic illness, disability, or death or injury to operators and maintainers; and enhance job performance and productivity of the personnel who operate, maintain, or support the system.

g. Survivability. For systems with missions that might require exposure to combat threats, the PM shall address personnel survivability issues including protection against fratricide, detection, and instantaneous, cumulative, and residual nuclear, biological, and chemical effects; personnel survivability against asymmetric threats; the integrity of the crew compartment; and provisions for rapid egress when the system is severely damaged or destroyed. The PM shall address special equipment or gear needed to sustain crew operations in the operational environment, including the suitability of equipment intended to enhance personnel survivability against asymmetric threats.

ENCLOSURE 9

ACQUISITION OF SERVICES

1. OVERVIEW. Acquisitions of services shall support and enhance the warfighting capabilities of the Department of Defense.

a. All acquisitions of services shall be based on clear, performance-based requirements; include identifiable and measurable cost, schedule, and performance outcomes consistent with customer needs; and receive adequate planning and management to achieve those outcomes.

b. Managers shall use a strategic, enterprise-wide approach for both planning and execution of the acquisition, and shall use business arrangements that are in the best interests of the Department of Defense.

c. All acquisitions of services shall comply with applicable statutes, regulations, policies, and other requirements, whether the services are acquired by or on behalf of the Department of Defense.

2. APPLICABILITY

a. The policies in this enclosure apply to:

(1) All services acquired from private sector entities, by or for the Department of Defense;

(2) Advisory and assistance services even if those services support research and development or construction activities; and

(3) Acquisitions of services occurring after a program achieves full operational capability, if those services were not subject to previous milestone reviews.

b. Except as in 2.c. of this enclosure, the policies in this enclosure do not apply to research and development activities, construction activities, or services that are reviewed and approved as an acquisition program or part of an acquisition program managed in accordance with this Instruction.

c. Senior officials and decision authorities may apply these policies to research and development activities at their discretion.

d. These policies shall not impede the ability of Senior Officials and Decision Authorities to rapidly respond to emergency situations.

### 3. RESPONSIBILITIES

a. The SAE of each Military Department shall be the Senior Official for acquisitions of services for their Military Department.

b. The USD(AT&L) shall be the Senior Official for acquisitions of services for the DoD Components outside the Military Departments. The USD(AT&L) may delegate decision authority to Commanders and Directors of the DoD Components.

c. Senior Officials shall be responsible for the acquisitions of services within their respective organizations. They shall establish life-cycle management structures to ensure effective implementation of the policies in this enclosure.

d. Senior Officials may designate Decision Authorities to review and approve acquisitions of services.

e. Consistent with the Department's strategic sourcing objective, Senior Officials shall collaborate with other Senior Officials, determine key categories of services for the Department, and dedicate full-time commodity managers to coordinate procurement of these services. Senior Officials shall conduct periodic spend analyses.

f. The USD(AT&L) shall conduct an annual review of the Department's policy for the acquisition of services, and assess the Department's progress in achieving its purpose. Senior Officials, and DoD Component Decision Authorities reporting to the USD(AT&L), shall conduct similar reviews of acquisitions within their authority.

4. ACQUISITION OF SERVICES PLANNING. Consistent with the size and complexity of the program, Senior Officials or their designees shall consider the following (section 2330 of Reference (k)):

a. Requirements Development and Management:

(1) The source of the requirement, the outcomes to be achieved and, if performance-based (see Federal Acquisition Regulation (FAR) Subpart 37.6 (Reference (bg))), what metrics will be used to measure the outcomes.

(2) How the requirement was previously satisfied.

(3) The nature and extent of market research conducted.

(4) Whether it complies, if a consolidated requirement, with Defense Federal Acquisition Regulation Supplement (DFARS) 207.170 (Reference (bh)).

(5) For bundled requirements, determine if a benefit analysis was done as prescribed in the DoD Benefit Analysis Guidebook (Reference (bi)).

b. Acquisition Planning:

- (1) The adequacy of the acquisition approach including appropriate milestones.
- (2) The cost/price estimate for the total planned acquisition.
- (3) How the acquisition will be funded and the availability of funding.
- (4) The technical, business, management, and other significant considerations, including the requirement for competition. For task and delivery order contracts, the enhanced competition requirements stated in sections 2304a and 2304c of Reference (k).
- (5) Opportunities for strategic sourcing.
- (6) The period of performance for the base year and all option years.
- (7) Demonstrated implementation of performance-based acquisition methods or rationale for not using those methods.
- (8) Opportunities to implement socio-economic business concerns.
- (9) Source selection process planning.
- (10) Any required waivers or deviations.
- (11) If other than full and open competition, why full and open competition procedures will not apply, citing the appropriate statutory authority. Actions taken to improve the competitive environment for the current requirement, and plans to improve competition for foreseeable follow-on acquisitions, shall be addressed.
- (12) If the acquisition strategy calls for a multi-year service contract (as distinguished from contracts that span multiple years—see FAR Subpart 17.1 (Reference (bj)) and DFARS Subpart 217.171 (Reference (bk))), the strategy shall address compliance with section 2306c of Reference (k) and Reference (c). OMB Circular A-11 requires that multi-year service contracts be scored as operating leases. Therefore, the Acquisition Strategy shall address the budget scorekeeping that will result from use of the proposed contracting strategy.
- (13) Before acquisition planning for contractor services, the head of the agency acting through manpower officials shall conduct an analysis using the criteria in Reference (r) to ensure contractors do not perform inherently governmental functions or services that are exempt from contract performance.
- (14) A lease-purchase analysis if required by OMB Circular A-94, Section 13 (Reference (bl)).

c. Solicitation and Contract Award:

(1) The type of business arrangements anticipated (e.g., single contract, multiple award task order contract, task order under existing multiple award contract, and interdepartmental transfers, or interdepartmental purchase requests).

(2) The duration of each business arrangement (base period and all option periods).

(3) Pricing arrangements (e.g., fixed price, cost reimbursement, time and materials, labor hour, or variations, based on guidance in FAR Part 16 (Reference (bm)) and, for commercial services, in FAR Part 12 (Reference (bn))).

(4) Proposed evaluation criteria and the employment of award and incentive fees to recognize and promote contract performance.

d. Risk Management: An assessment of current and potential technical, cost, schedule, and performance risks and the plan for mitigating or retiring those risks.

e. Contract Tracking and Oversight: The existing or planned management approach following contract award, quality assurance surveillance or written oversight plans and responsibilities, and tracking procedures or processes used to monitor contract performance.

f. Performance Evaluation: The plan for evaluating whether the metrics and any other measures identified to guide the acquisition have been achieved. These measures shall include the thresholds for cost, schedule, and performance for the acquisition of a service.

5. REVIEW AND APPROVAL

a. Senior Officials shall designate Decision Authorities to review Acquisitions of Services for each of the categories in Table 9 in this enclosure.

b. The following procedures shall apply to IT services estimated to cost more than \$500 million, all services estimated to cost more than \$1 billion, and special interest programs designated by the USD(AT&L), the ASD(NII), or their designees:

(1) Senior Officials of the Military Departments and decision authorities in DoD Components outside the Military Departments shall, before the final solicitation is issued (or, for other than full and open competition, before negotiations commence) notify the USD(AT&L) of any proposed acquisition of non-IT services with a total estimated value over \$1 billion (base year(s) and options), or the ASD(NII)/DoD CIO of any proposed acquisition of IT services with a total estimated value over \$500 million (base year(s) and options).

Table 9. Acquisition of Services Categories.

Category	Threshold	Decision Authority
Acquisitions >\$1B	Any acquisition of services with a total estimated cost of \$1 billion or more	USD(AT&L) or designee
IT Acquisitions >\$500M	Any acquisition of IT services with a total estimated cost of \$500 million	ASD(NII)/DoD CIO or as designated
Special Interest	As designated by USD(AT&L), ASD(NII)/DoD CIO, or Military Department Senior Official	USD(AT&L) or Senior Officials
Services Category I	Acquisitions of services estimated to cost \$250 million or more	Senior Official or as designated
Services Category II	Acquisitions of services estimated to cost \$10 million or more, but less than \$250 million	Senior Official or as designated
Services Category III	Acquisitions of services estimated to cost more than the simplified acquisition threshold but less than \$10 million	Senior Official or as designated
<ul style="list-style-type: none"> <li>• Dollar amounts are in Fiscal Year 2006 constant-year dollars.</li> <li>• Related task orders within an ordering vehicle shall be viewed as one effort for the purpose of determining the appropriate thresholds.</li> <li>• If a proposed acquisition includes both hardware and services, and the estimated value of the services portion exceeds the values specified in paragraphs 5.b.(1) and 5.b.(3) of this enclosure, the notification requirements of those paragraphs shall apply.</li> <li>• Oversight of Services Category III acquisitions should be implemented as soon as possible, but shall not be implemented later than October 1, 2009.</li> <li>• If the contract or task order is not performance-based, and the decision authority is other than the Senior Official, acquisitions of services expected to exceed \$78.5 million shall require approval of the senior procurement executive (DFARS Subpart 237.170 (Reference (bo))).</li> <li>• Decision authorities or their designees shall review and approve all contracts and task or delivery orders exceeding the simplified acquisition threshold, issued by a non-DoD agency on behalf of the Department of Defense (DFARS Subpart 217.78 (Reference (bp))).</li> </ul>		

(2) Notification shall consist of a briefing or written notification to the Director, Defense Procurement, Acquisition Policy, and Strategic Sourcing (DPAP), in the Office of the USD(AT&L), or the Director, Acquisition, in the Office of the ASD(NII), indicating the expected value of the acquisition of services for the projected life (base year and options) of the contract, and providing copies of the Acquisition Strategy and, if competitive, sections L and M of the solicitation. A Justification and Approval and an acquisition plan will be submitted if the acquisition strategy uses a sole source approach or if directed by the Decision Authority.

(3) The ASD(NII)/DoD CIO shall notify the USD(AT&L) of any proposed acquisitions of IT services with a total estimated value greater than \$1 billion (base year(s) and options).

(4) Within 10 working days after receipt of the notification, the USD(AT&L) or ASD(NII)/DoD CIO or designee shall initiate a review of the proposed acquisition strategy. The review shall be accomplished within 30 days. Issues arising from the review shall be resolved in accordance with procedures specified by the USD(AT&L) or ASD(NII)/DoD CIO or designee,

in direct coordination with the originating Senior Official or decision authority. After completion of the review, the Director, DPAP (for all acquisitions greater than \$1 billion), or the ASD(NII) (for acquisitions of IT services greater than \$500 million), shall document the result in a decision memorandum. The acquisition may only proceed, and final RFPs may only be released, after the Acquisition Strategy has been approved.

c. The Director, DPAP, shall maintain a list of the acquisitions of services expected to exceed \$1 billion (base year(s) and options) based upon the notifications provided by the DoD Components.

6. INDEPENDENT MANAGEMENT REVIEWS (HEREAFTER REFERRED TO AS "PEER REVIEWS"). The Director, DPAP, shall organize review teams and facilitate pre-award and post-award Peer Reviews for all service contracts with an estimated value of \$1 billion or more (including options). The teams shall be comprised of senior contracting leaders from across the Department of Defense, as well as members of the Office of General Counsel who are civilian employees or military personnel from outside of the military department or other defense agency whose procurement is the subject of the Peer Review. Senior Officials and DoD Component Decision Authorities under the cognizance of USD(AT&L) shall establish their own procedures to conduct pre and post-award Peer Reviews for contracts valued at less than \$1 billion.

a. Pre-Award Peer Reviews shall be conducted in three phases for competitive procurements: 1) prior to issuance of the solicitation; 2) prior to request for final proposal revisions; and 3) prior to contract award. For non-competitive procurements, pre-award Peer Reviews shall be conducted at the pre- and post-business clearance phases. For continuity, review teams shall be comprised of the same members for each phase, whenever possible. Pre-Award Peer Reviews shall assess the following elements:

- (1) The process was well understood by both Government and Industry;
- (2) Source selection was carried out in accordance with the Source Selection Plan and RFP;
- (3) The Source Selection Evaluation Board evaluation was clearly documented;
- (4) The Source Selection Advisory Council advisory panel recommendation was clearly documented;
- (5) The Source Selection Authority decision was clearly derived from the conduct of the source selection process;
- (6) All source selection documentation is consistent with the Section M evaluation criteria; and
- (7) The business arrangement.

b. Post-Award Peer Reviews shall assess the following elements:

(1) Contract performance in terms of cost, schedule, and requirements;

(2) Use of contracting mechanisms, including the use of competition, the contract structure and type, the definition of contract requirements, cost or pricing methods, the award and negotiation of task orders, and management and oversight mechanisms;

(3) The contractor's use, management, and oversight of subcontractors;

(4) The staffing of contract management and oversight functions;

(5) The extent of any pass-through charges and excessive pass-through charges (as defined in DFARS 252.215-7004 (Reference (bq)) and section 852 of P.L. 109-364 (Reference (br))); and

(6) For contracts under which one contractor provides oversight for services performed by other contractors:

(a) Evaluation of the extent of the agency's reliance on the contractor to perform acquisition functions closely associated with inherently governmental functions as defined in paragraph (b)(3) of section 2383 of Reference (k); and

(b) Evaluation of the financial interest of any prime contractor performing acquisition functions described in paragraph 6.b.(6)(a) of this enclosure in any contract or subcontract with regard to which the contractor provided advice or recommendations to the agency.

7. DATA COLLECTION. Senior Officials and DoD Component Decision Authorities under the cognizance of USD(AT&L) shall establish procedures to collect acquisition of services data. The collection of the following data shall be automated, and the data may be requested by the USD(AT&L), ASD(NII)/DoD CIO, or Senior Official at any time:

a. The services purchased.

b. The total estimated value (base year(s) and options) of the contract/task order/interdepartmental purchase request.

c. The total estimated value of the instant acquisition and the total dollar amount obligated to date on the contract.

d. The type of contract action used to make the purchase (i.e., fixed price type, cost type, or time and materials task order/contract).

e. Whether the purchase was made through:

(1) A performance-based contract, performance-based task order, or other performance-based arrangement that contains firm fixed prices for the specific tasks to be performed;

(2) Any other performance-based contract, performance-based task order, or performance-based arrangement; or

(3) Any contract, task order, or other arrangement that is not performance-based.

f. If the purchase was made on behalf of the Department of Defense, the identity of the agency that made the purchase.

g. The extent of competition in making the purchase and the number of offerors.

h. Whether the purchase was made from:

(1) A small business concern;

(2) A small business concern owned and controlled by socially and economically disadvantaged individuals; or

(3) A small business concern owned and controlled by women.

(4) A small business concern owned and controlled by a veteran;

(5) A small business concern owned and controlled by a service-disabled veteran; or

(6) A small business concern certified by the Small Business Administration as an Historically Underutilized Business Zone concern.

i. The functions and missions performed by the contractor.

j. The contracting organization, the component of the DoD administering the contract, and the organization whose requirements are being met through contractor performance of this function.

k. The funding source, by appropriation and operating agency.

l. The fiscal year for which the activity first appeared on an inventory required by paragraph (c) of section 2330a of Reference (k).

m. The number of full time contractor employees (or its equivalent) paid for the performance of the activity.

n. A determination whether the contract is a personal services contract.

8. COMPLIANCE WITH TITLE 40/CCA. All acquisitions of IT services, regardless of acquisition of services category, are subject to sections 11101 et seq. of Title 40/CCA (Reference (v)). For acquisitions of IT services with a total estimated value greater than \$500 million, DoD Component Senior Officials, Decision Authorities, and CIOs shall ensure:

a. Acquisition planning addresses the elements of Table 8 in Enclosure 5; and

b. The acquisition strategy and related planning address the relevant aspects of sections 11101 et seq. of subtitle III of Reference (v) before the final solicitation is issued or, for other than full and open competition, before negotiations commence.

## 9. DEFINITIONS

a. Service. Engagement of the time and effort of a contractor whose primary purpose is to perform an identifiable task, or tasks, rather than to furnish an end item of supply.

b. Procurement Action. With respect to the acquisition of services, a procurement action includes the following:

(1) Entry into a contract or any other form of agreement including, but not limited to, basic ordering agreements, blanket purchase agreements, indefinite quantity/indefinite delivery contracts, and similar ordering agreements.

(2) Issuance of a task order or any transfer of funds to acquire a service on behalf of the Department of Defense.

c. Acquisition of Services. The execution of one or multiple contracts or other instruments committing or obligating funds (e.g., funds transfer, placing orders under existing contracts) for a specified requirement. Acquisition begins at the point when agency needs are established and includes all functions directly related to the process of fulfilling those needs by contract, agreements, or funds transfer.

d. IT Services. The performance of any work related to IT and the operation of IT, including NSS. This includes outsourced IT-based business processes, outsourced IT, and outsourced information functions.

ENCLOSURE 10

PROGRAM MANAGEMENT

1. ASSIGNMENT OF PROGRAM MANAGERS. A PM shall be designated for each acquisition program. This designation shall be made no later than program initiation, and may be made earlier when determined by the MDA. It is essential that the PM have an understanding of user needs and constraints, familiarity with development principles, and requisite management skills and experience. Unless a waiver is granted by the DAE or CAE, a PM shall be experienced and certified in acquisition management. Waivers should be strictly avoided. 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 IA 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 4 years, in accordance with section 1734 of Reference (k). PMs for ACAT II and other significant non-major programs shall be assigned for not less than 3 years.

2. PROGRAM MANAGEMENT AGREEMENTS (PMAs)

a. PMAs establish achievable and measurable annual plans that are fully resourced and reflect the approved program. PMAs shall be prepared for ACAT I and II programs after the Department makes the investment decision to pursue a new program and the PM has been assigned. The PM, the CAE, and the requirements and, where applicable, resource authorities shall sign the agreement. PMAs shall be updated annually or more frequently if the conditions that formed the basis for the agreement (e.g., requirements, funding, or execution plans) have changed.

b. PMAs shall establish the PM's clear authority to object to the addition of new program requirements that would be inconsistent with the parameters established at Milestone B and reflected in the PMA (unless such requirements are approved by the appropriate CSB); and the authority to recommend to the appropriate CSB reduced program requirements that have the potential to improve program cost or schedule in a manner consistent with program objectives.

c. DoD Components are encouraged to prepare PMAs for ACAT III programs.

3. ASSIGNMENT OF PROGRAM EXECUTIVE RESPONSIBILITY

a. Unless a waiver is granted for a particular program by the USD(AT&L), 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.

b. Unless a waiver is granted by the DAE or CAE, a PEO shall be experienced and certified in acquisition management. Waivers should be strictly avoided.

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c. The PEO shall be dedicated to executive management and shall not have other command responsibilities unless waived by the USD(AT&L).

d. The CAE shall make this assignment no later than program initiation, or within 3 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) of the decision to have a PM report directly to the CAE.

e. 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 increment of capability shall, at a minimum, have passed IOC, have achieved full-rate production, be certified as interoperable within the intended operational environment, and be supportable as planned.

4. JOINT PROGRAM MANAGEMENT. The DoD Components shall not terminate or substantially reduce participation in joint ACAT ID or ACAT IAM programs without Requirements Authority review and USD(AT&L) approval. The USD(AT&L) may require a DoD Component to continue some or all funding, as necessary, to sustain the joint program in an efficient manner, despite approving their request to terminate or reduce participation. Substantial reduction is defined as a funding or quantity decrease of 50 percent or more in the total funding or quantities in the latest President's Budget for that portion of the joint program funded by the DoD Component seeking the termination or reduced participation.

#### 5. INTERNATIONAL COOPERATIVE PROGRAM MANAGEMENT

a. PMs shall pursue opportunities throughout the acquisition life cycle that enhance international cooperation and improve interoperability (DoD Directive 2010.6 (Reference (bs))).

b. An international cooperative program is any acquisition program or technology project that includes participation by one or more foreign nations, through an international agreement, during any phase of a system's life cycle. All AT&L-related international agreements may use the streamlined procedures in Reference (f) for review and approval rather than the procedures in DoD Directive 5530.3 (Reference (bt)). All international cooperative programs shall consider applicable U.S.-ratified materiel international standardization agreements (Reference (h)), and fully comply with foreign disclosure and program protection requirements. Programs containing classified information shall have a Delegation of Disclosure Authority Letter or other written authorization issued by the DoD Component's cognizant foreign disclosure office prior to entering discussions with potential foreign partners.

c. DoD Components shall notify and obtain the approval of the USD(AT&L) for ACAT ID or ACAT IAM programs before terminating or substantially reducing participation in international cooperative programs under signed international agreements. The USD(AT&L) may require the DoD Component to continue to provide some or all of the funding for that program in order to minimize the impact on the international cooperative program. Substantial

reduction is defined as a funding or quantity decrease of 25 percent or more in the total funding or quantities in the latest President's Budget for that portion of the international cooperative program funded by the DoD Component seeking the termination or reduced participation.

d. Acquisition and Cross Servicing Agreement (ACSA) Authorities: PMs and others responsible for the acquisition from and transfer to authorized foreign governments of logistic support, supplies, and services shall be aware of and understand DoD Directive 2010.9 (Reference (bu)) for the use of Acquisition and Cross Servicing Agreement (ACSA) Authorities and the potential impact that ACSA acquisitions and transfers may have on their own support strategies.

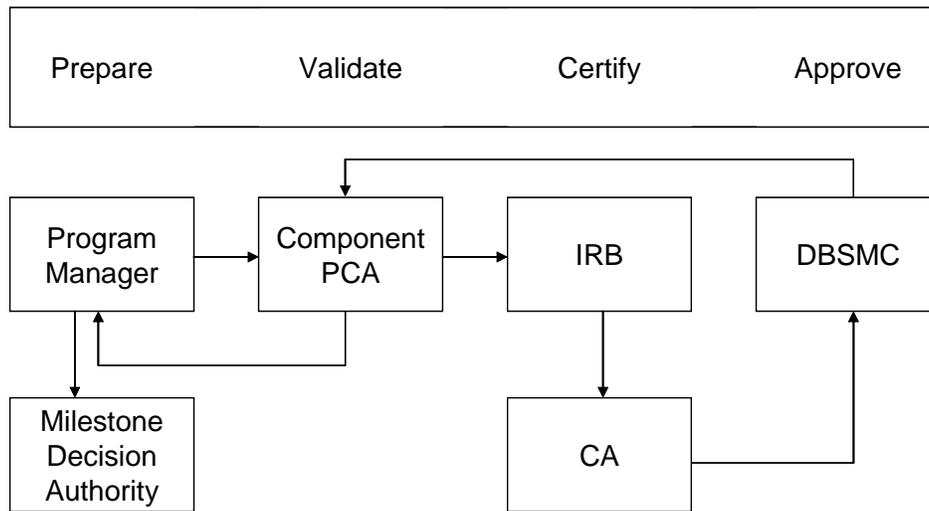
6. LIFE-CYCLE MANAGEMENT OF INFORMATION. PMs shall comply with record-keeping responsibilities under the Federal Records Act for the information collected and retained in the form of electronic records. (See DoD Directive 5015.2 (Reference (bv)).) Electronic record-keeping systems shall preserve the information submitted, as required by section 3101 of title 44, U.S.C. (Reference (bw)) and implementing regulations. Electronic record-keeping systems shall also provide, wherever appropriate, for the electronic acknowledgment of electronic filings that are successfully submitted. PMs shall consider the record-keeping functionality of any systems that store electronic documents and electronic signatures to ensure users have appropriate access to the information and can meet the Agency's record-keeping needs.

ENCLOSURE 11

MANAGEMENT OF DEFENSE BUSINESS SYSTEMS

1. PURPOSE. This enclosure describes the procedures for review and certification of defense business system modernizations with total modernization or development funding exceeding \$1 million.
  
2. DEFINITION. The term “defense business system” means an information system, other than a national security system, operated by, for, or on behalf of the Department of Defense, including financial systems, mixed systems, financial data feeder systems, and IT and information assurance infrastructure. Defense business systems support business activities such as acquisition, financial management, logistics, strategic planning and budgeting, installations and environment, and human resource management.
  
3. ACQUISITION REVIEW PROCEDURES
  - a. Obligation of Funds: Funds shall not be obligated for defense business systems until the DBSMC approves the certification required by section 2222 of Reference (k).
  
  - b. IRB: An IRB shall facilitate program communications and issue resolution, and shall support the MDA for ACAT IAM business systems.
  
  - c. Enterprise Risk Assessment Methodology (ERAM): An independent risk assessment shall be performed prior to all milestone decisions for each ACAT IAM business system. These assessments are known as ERAM assessments. The ERAM findings shall be provided to the IRB and the MDA prior to all milestone decisions. Additional ERAMs can be requested by the cognizant IRB or the MDA. For programs below the MAIS threshold, the responsible MDA and the PM shall consider a similar independent risk assessment.
  
  - d. The CAE shall provide the cognizant IRB with a written statement that the program is compliant with applicable statute and regulation (e.g., the requirements in Enclosure 4), describe any issues applicable to the milestone decision, and recommend approval of the milestone by the MDA.
  
  - e. Figure 3 depicts executive-level certification and approval activities for defense business systems. The IRB Concept of Operations (Reference (bx)) and IRB User Guidance (Reference (by)) provide additional detail on the process, roles and responsibilities, and documentation requirements. The following principal actions shall support IRB Certification and DBSMC approval:

Figure 3. IRB Certification and DBSMC Approval Process.



(1) Prepare. The PM shall describe the program and update the DoD global business system inventory regarding the specific certification request. The PM shall complete an economic viability review and prepare other plans or analyses as required by the DoD Component Pre-Certification Authority (PCA) or the responsible IRB.

(2) Validate. Each DoD Component shall designate a PCA (typically within its CIO organization) with portfolio responsibility for the organization. The PCA shall serve as the primary authority within the DoD Component responsible for review and validation of business systems certification requests, and shall identify the programs requiring IRB Certification and DBSMC approval. The PCA shall be responsible for validation of all information submitted by the PM. The PCA shall maintain a readily available library of supporting documentation for all defense business system programs. The PCA shall transmit the validated defense business system certification request to the responsible IRB for certification.

(3) Certify

(a) The responsible IRB advises the IRB Chair on matters related to defense business system certification requests. The IRB Chair shall determine whether each request:

1. is in compliance with the enterprise architecture; or
2. is necessary to achieve a critical national security capability or address a critical requirement in an area such as safety or security; or
3. is necessary to prevent a significant adverse effect on a project that is needed to achieve an essential capability, taking into consideration the alternative solutions for preventing such adverse effect.

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(b) If the IRB Chair determines that the certification request satisfies one or more of the above criteria, the Chair shall recommend that the appropriate Approval Authority sign a certification memorandum and request DBSMC approval. The Approval Authorities (also referred to as Certification Authorities) are the USD(AT&L) for any defense business system of which the primary purpose is to support acquisition, logistics, or installations and environment activities; USD(C) for any defense business system of which the primary purpose is to support financial management, or strategic planning and budgeting activities; USD(P&R) for any defense business system of which the primary purpose is to support human resource management activities; ASD(NII) for any defense business system of which the primary purpose is to support information technology infrastructure or information assurance activities; and the Deputy Secretary of Defense for any defense business system of which the primary purpose is to support any DoD activity not covered in this paragraph (section 2222 of Reference (k)). The certification memorandum shall include any conditions placed on the certification.

(4) Approve. The DBSMC Chair is the final approval authority for all defense business system certification requests. The Chair shall document decisions in an official memorandum to affected PMs through the DoD Component PCAs. DBSMC Chair approval shall occur before the first milestone review of an acquisition program or technology project. The PM shall include a copy of the DBSMC-approved DoD Certification Authority Memorandum with the documentation provided to the MDA. A DBSMC certification approval does not constitute authority to execute an acquisition program. Consistent with those documents, only the appropriate MDA can approve the acquisition strategy, technology readiness, milestones, and other aspects of a formal acquisition program. The statutory and regulatory requirements specified in this document, and applicable to business systems, shall be followed.

4. ANNUAL REVIEW. Following DBSMC approval, the IRB Chair shall review the program annually. If the IRB Chair determines that the system has failed to comply with previously imposed conditions, or that risks to the system are not acceptable, the Chair may recommend de-certification to the DBSMC through the DoD Certification Authority.

ENCLOSURE 12

SYSTEMS ENGINEERING

1. SYSTEMS ENGINEERING ACROSS THE ACQUISITION LIFE CYCLE. Rigorous systems engineering discipline is necessary to ensure that the Department of Defense meets the challenge of developing and maintaining needed warfighting capability. Systems engineering provides the integrating technical processes to define and balance system performance, cost, schedule, and risk within a family-of-systems and systems-of-systems context. Systems engineering shall be embedded in program planning and be designed to support the entire acquisition life cycle.

2. SYSTEMS ENGINEERING PLAN (SEP)

a. PMs shall prepare a SEP for each milestone review, beginning with Milestone A. At Milestone A, the SEP shall support the TDS; at Milestone B or later, the SEP shall support the Acquisition Strategy. The SEP shall describe the program's overall technical approach, including key technical risks, processes, resources, metrics, and applicable performance incentives. It shall also detail the timing, conduct, and success criteria of technical reviews.

b. The DUSD(A&T) shall be the SEP approval authority for programs that will be reviewed by the DAB/ITAB. DoD Components shall submit the SEPs to the Director, SSE, at least 30 days before the scheduled DAB/ITAB milestone review.

3. SYSTEMS ENGINEERING LEADERSHIP. Each PEO, or equivalent, shall have a lead or chief systems engineer on his or her staff responsible to the PEO for the application of systems engineering across the PEO's portfolio of programs. The PEO lead or chief systems engineer shall:

a. Review assigned programs' SEPs and oversee their implementation.

b. Assess the performance of subordinate lead or chief systems engineers assigned to individual programs in conjunction with the PEO and PM.

4. TECHNICAL REVIEWS. Technical reviews of program progress shall be event-driven and conducted when the system under development meets the review entrance criteria as documented in the SEP. They shall include participation by subject matter experts who are independent of the program (i.e., peer review), unless specifically waived by the SEP approval authority as documented in the SEP.

5. CONFIGURATION MANAGEMENT. The PM shall use a configuration management approach to establish and control product attributes and the technical baseline across the total system life cycle. This approach shall identify, document, audit, and control the functional and physical characteristics of the system design; track any changes; provide an audit trail of program design decisions and design modifications; and be integrated with the SEP and technical planning. At completion of the system level Critical Design Review, the PM shall assume control of the initial product baseline for all Class 1 configuration changes.

6. ESOH. The PM shall integrate ESOH risk management into the overall systems engineering process for all developmental and sustaining engineering activities. As part of risk reduction, the PM shall eliminate ESOH hazards where possible, and manage ESOH risks where hazards cannot be eliminated. The PM shall use the methodology in MIL-STD-882D, "DoD Standard Practice for System Safety" (Reference (bz)). PMs shall report on the status of ESOH risks and acceptance decisions at technical reviews. Acquisition program reviews and fielding decisions shall address the status of all high and serious risks, and applicable ESOH technology requirements. Prior to exposing people, equipment, or the environment to known system-related ESOH hazards, the PM shall document that the associated risks have been accepted by the following acceptance authorities: the CAE for high risks, PEO-level for serious risks, and the PM for medium and low risks. The user representative shall be part of this process throughout the life cycle and shall provide formal concurrence prior to all serious- and high-risk acceptance decisions.

a. Programmatic ESOH Evaluation (PESHE). The PM for all programs, regardless of ACAT level, shall prepare a PESHE which incorporates the MIL-STD-882D process and includes the following: identification of ESOH responsibilities; the strategy for integrating ESOH considerations into the systems engineering process; identification of ESOH risks and their status; a description of the method for tracking hazards throughout the life cycle of the system; identification of hazardous materials, wastes, and pollutants (discharges/emissions/noise) associated with the system and plans for their minimization and/or safe disposal; and a compliance schedule covering all system-related activities for the NEPA (sections 4321-4347 of Reference (ac) and Reference (ad)). The Acquisition Strategy shall incorporate a summary of the PESHE, including the NEPA/E.O. 12114 (Reference (ad)) compliance schedule.

b. NEPA/E.O. 12114. The PM shall conduct and document NEPA/E.O. 12114 analyses for which the PM is the action proponent. The PM shall provide system-specific analyses and data to support other organizations' NEPA and E.O. 12114 analyses. The CAE (or for joint programs, the CAE of the Lead Executive Component) or designee, is the approval authority for system-related NEPA and E.O. 12114 documentation.

c. Mishap Investigation Support. PMs will support system-related Class A and B mishap investigations by providing analyses of hazards that contributed to the mishap and recommendations for materiel risk mitigation measures, especially those that minimize human errors.

7. CORROSION PREVENTION AND CONTROL. As part of a long-term DoD corrosion prevention and control strategy that supports reduction of total cost of system ownership, each ACAT I program shall document its strategy in a Corrosion Prevention Control Plan. The Plan shall be required at Milestones B and C. Corrosion considerations shall be objectively evaluated throughout program design and development activities, with trade-offs made through an open and transparent assessment of alternatives.

8. MODULAR OPEN SYSTEMS APPROACH (MOSA). Program managers shall employ MOSA to design for affordable change, enable evolutionary acquisition, and rapidly field affordable systems that are interoperable in the joint battle space.

9. DATA MANAGEMENT AND TECHNICAL DATA RIGHTS

a. Program Managers for ACAT I and II programs, regardless of planned sustainment approach, shall assess the long-term technical data needs of their systems and reflect that assessment in a Data Management Strategy (DMS). The DMS shall:

(1) Be integrated with other life-cycle sustainment planning and included in the Acquisition Strategy;

(2) Assess the data required to design, manufacture, and sustain the system, as well as to support re-competition for production, sustainment, or upgrades; and

(3) Address the merits of including a priced contract option for the future delivery of technical data and intellectual property rights not acquired upon initial contract award and shall consider the contractor's responsibility to verify any assertion of restricted use and release of data.

b. The DMS shall be approved in the context of the Acquisition Strategy prior to issuing a contract solicitation.

10. IUID. To enhance life-cycle management of assets in systems acquisition and sustainment, and to provide more accurate asset valuation, all PMs shall plan for and implement IUID to identify and track applicable major end items, configuration-controlled items, and Government-furnished property. IUID planning and implementation shall be documented in an IUID Implementation Plan and summarized in the program's SEP (Reference (ao)) and DoD Directive 8320.03 (Reference (ca)).

11. SPECTRUM SUPPORTABILITY. For all electromagnetic spectrum-dependent systems, PMs shall comply with U.S. and host nation spectrum regulations. They shall submit written determinations to the DoD Component CIO or equivalent that the electromagnetic spectrum necessary to support the operation of the system during its expected life cycle is, or will be,

**CANCELLED BY (WITH THE EXCEPTION OF ENCLOSURE 9):  
DEPUTY SECRETARY OF DEFENSE MEMORANDUM, "DEFENSE ACQUISITION," 11/26/2013**

*DoDI 5000.02, December 8, 2008*

available (Reference (aq)). These determinations shall be the basis for recommendations provided to the MDA at the milestones defined in Tables 2-1, 2-2, and 3 in Enclosure 4 of this Instruction.