



DoD INSTRUCTION 5000.85

MAJOR CAPABILITY ACQUISITION

Originating Component: Office of the Under Secretary of Defense for Acquisition and Sustainment

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Approved by: Ellen M. Lord, Under Secretary of Defense for Acquisition and Sustainment

Purpose: In accordance with DoD Directive (DoDD) 5135.02, this issuance establishes policy and prescribes procedures that guide the acquisition of major capability acquisition programs, including major defense acquisition programs (MDAPs); other programs categorized as acquisition category (ACAT) I; major systems, usually categorized as ACAT II; automated information systems (AIS) (not managed by other acquisition pathways); and other capabilities developed via the major capability acquisition pathway. Wholly and majority National Intelligence Program-funded acquisition programs will be executed in accordance with Intelligence Community policy.

TABLE OF CONTENTS

SECTION 1: GENERAL ISSUANCE INFORMATION	4
1.1. Applicability.	4
1.2. Policy.	4
SECTION 2: RESPONSIBILITIES	6
2.1. Under Secretary of Defense for Acquisition and Sustainment (USD(A&S)).....	6
2.2. Secretaries of the Military Departments.	6
2.3. Military Service Chiefs.	6
SECTION 3: MAJOR CAPABILITY ACQUISITION PROCEDURES	8
3.1. General Procedures.	8
a. Program Planning.....	8
b. Decision Reviews.....	8
c. DoD Process Relationships.	9
3.2. Flexible Implementation.	9
3.3. Program ACATs.	10
3.4. Acquisition Process Decisions and Phases.	10
3.5. MDD.	11
3.6. MSA Phase.....	11
3.7. Milestone A.....	12
3.8. TMRR Phase.....	13
3.9. Development RFP Release Decision Point.....	14
3.10. Milestone B.....	15
3.11. EMD Phase.	15
3.12. Milestone C.....	16
3.13. P&D Phase.	17
3.14. FRP Decision or FD Decision.....	17
3.15. Operations and Support (O&S) Phase.	18
APPENDIX 3A: ACATs	20
3A.1. Purpose.....	20
3A.2. ACATs.	20
a. Categories.....	20
b. ACAT IB Programs.	21
c. Program Recategorization.....	22
APPENDIX 3B: PROGRAM INFORMATION.....	23
3B.1. Program Information.	23
3B.2. Information Selection.....	23
APPENDIX 3C: ADDITIONAL PROGRAM MANAGEMENT CONSIDERATIONS.....	24
3C.1. Purpose.	24
3C.2. Program Office Structure and Organizations.	24
a. Program Office Structure.	24
b. Joint Program Office Organization.....	24
3C.3. Program Management Responsibilities.....	25
a. Acquisition Strategies.	25
b. Program Baseline Development and Management.....	28

c. Investment Management.	28
d. Risk Management.	31
e. Configuration Steering Board (CSB).	33
3C.4. International Acquisition and Exportability.	33
a. International Acquisition and Exportability Planning.	33
b. Exportability and International Acquisition Roadmap Study.	34
c. International Cooperative Program (ICP) Management.	34
3C.5. Industrial Base Analysis and Considerations.	34
3C.6. Records Management.	35
APPENDIX 3D: PRODUCT SUPPORT	36
3D.1. Purpose.	36
3D.2. PS and Sustainment Across the Life Cycle.	36
3D.3. PSS.	43
3D.4. Sustainment Metrics.	46
3D.5. PS Assessments and Reviews.	48
a. Independent Logistics Assessments (ILAs).	48
b. SRs.	48
GLOSSARY	50
G.1. Acronyms.	50
G.2. Definitions.	52
REFERENCES	53

TABLES

Table 1. Description and Decision Authority for ACAT I – III Programs.	20
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FIGURES

Figure 1. Adaptive Acquisition Framework.	5
Figure 2. Major Capability Acquisition Model.	10
Figure 3. Options Matrix.	29
Figure 4. Sample Program Cost, Fielding, and Performance Goals Memorandum.	30

SECTION 1: GENERAL ISSUANCE INFORMATION

1.1. APPLICABILITY.

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

1.2. POLICY.

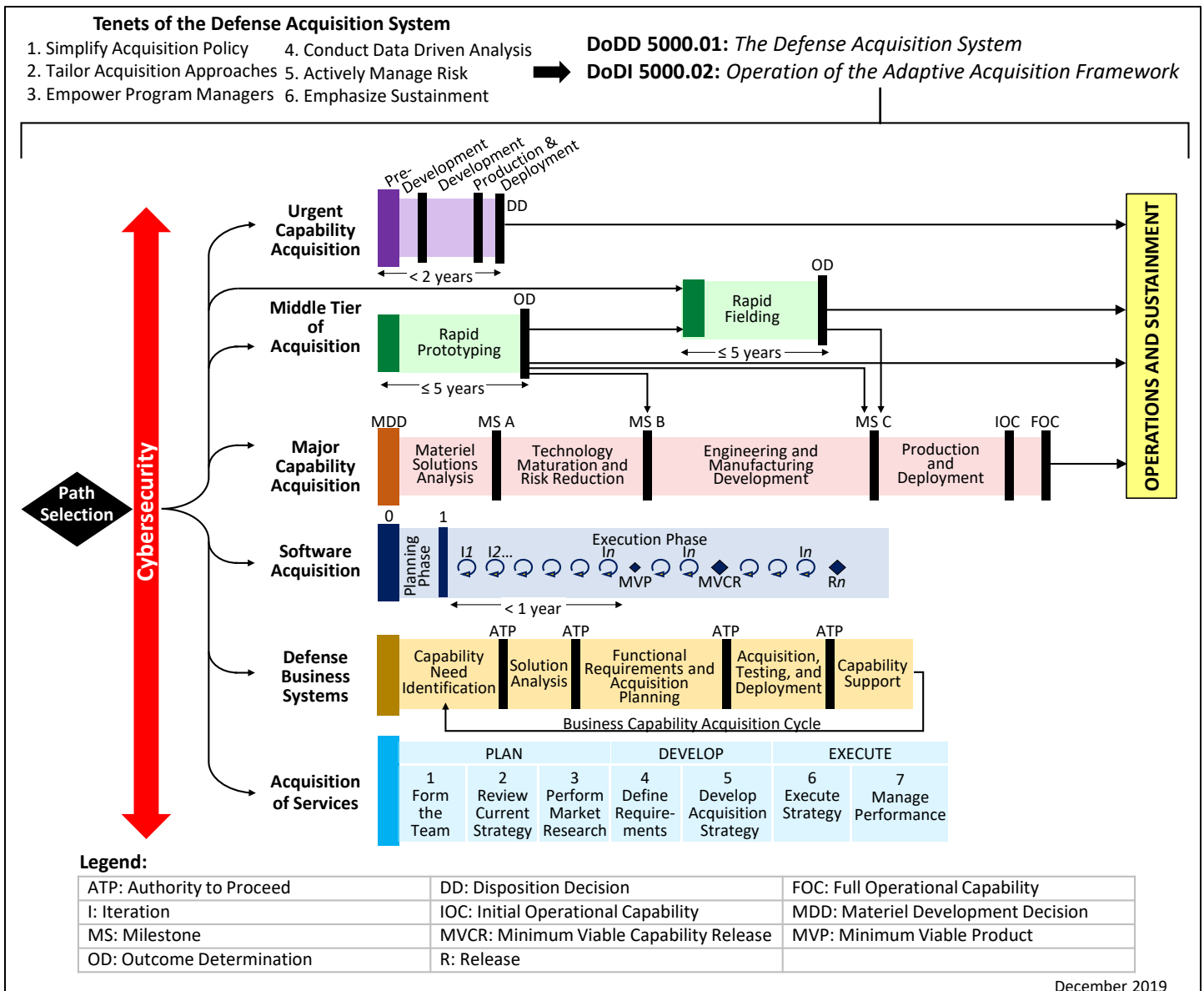
a. The overarching management principles that guide the defense acquisition system are set forth in Paragraph 1.2. of DoDD 5000.01.

b. In accordance with DoD Instruction (DoDI) 5000.02, it is DoD policy to deliver operationally effective, suitable, survivable, affordable, secure, and supportable solutions to the end user in a timely manner.

(1) To that end, the DoD will prioritize speed of delivery, security, continuous adaptation, and frequent modular upgrades to ensure a highly effective and lethal force.

(2) To achieve that objective, the DoD will employ an adaptive acquisition framework (Figure 1), comprised of acquisition pathways, each tailored for the unique characteristics and risk profile of the capability being acquired.

Figure 1. Adaptive Acquisition Framework.



SECTION 2: RESPONSIBILITIES

The responsibilities in this section are in addition to those specified in DoDD 5000.01.

2.1. UNDER SECRETARY OF DEFENSE FOR ACQUISITION AND SUSTAINMENT (USD(A&S)).

The USD(A&S) is the Defense Acquisition Executive (DAE) and establishes policies on and supervises all elements of the Department relating to acquisition (including system design, development, and production and procurement of goods and services) and sustainment (including logistics, maintenance, and materiel readiness).

2.2. SECRETARIES OF THE MILITARY DEPARTMENTS.

The Secretary of the Military Department acquiring an MDAP represents the customer (i.e., the DoD Component(s) fielding the system). The Secretary acquiring an MDAP:

- a. In coordination with the Military Service Chiefs, balances resources against priorities and ensures appropriate trade-offs are made among cost, schedule, technical feasibility, and performance throughout the life of the program.
- b. Ensures that the requirements document supporting a Milestone B or subsequent decision for an MDAP are not approved until the Service Chief determines in writing that the requirements in the document are necessary and realistic in relation to the program cost and fielding targets established pursuant to Section 2448a of Title 10, United States Code (U.S.C.).

2.3. MILITARY SERVICE CHIEFS.

- a. The Military Service Chiefs, not including the Commandant of the United States Coast Guard, assist the Secretary of the Military Department concerned in performing the acquisition-related functions outlined in Paragraphs (1) through (6):

- (1) Decisions regarding the balancing of resources and priorities, and associated trade-offs among cost, schedule, technical feasibility, and performance on MDAPs.

- (2) The coordination of measures to control requirements creep.

- (3) The recommendation of trade-offs among life-cycle cost, schedule, and performance objectives, and procurement quantity objectives, to ensure acquisition programs deliver best value in meeting the approved military requirements.

- (4) Termination of development or procurement programs for which life-cycle cost, schedule, and performance expectations are no longer consistent with approved military requirements and levels of priority, or which no longer have approved military requirements.

(5) The development and management of career paths in acquisition for military personnel pursuant to Section 1722a of Title 10, U.S.C.

(6) The assignment and training of contracting officer representatives when such representatives are required to be members of the armed forces because of the nature of the contract concerned.

b. For MDAPs, the Service Chief, or for joint programs, the Service Chiefs concerned, concur:

(1) With the need for a materiel solution as identified in the materiel development decision (MDD) review prior to entry into the materiel solution analysis (MSA) phase.

(2) With the cost, schedule, technical feasibility, and performance trade-offs that have been made with regard to the program before Milestone A approval is granted pursuant to Section 2366a of Title 10, U.S.C.

(3) That appropriate trade-offs among cost, schedule, technical feasibility, and performance objectives have been made to ensure that the program is affordable when considering the per unit cost and the total life-cycle cost before Milestone B approval is granted pursuant to Section 2366b of Title 10, U.S.C.

(4) Before Milestone C approval is granted, that the requirements in the requirements document are necessary and realistic in relation to program cost and fielding targets, pursuant to Section 2448a of Title 10, U.S.C.

c. The Service Chiefs fielding MDAPs will represent the customer, and will advise the milestone decision authority (MDA) on trade-offs before Milestones A and B.

SECTION 3: MAJOR CAPABILITY ACQUISITION PROCEDURES

3.1. GENERAL PROCEDURES.

a. Program Planning.

(1) A rapid, iterative approach to capability development reduces cost, avoids technological obsolescence, and reduces acquisition risk. Consistent with that intent, acquisitions will rely on mature, proven technologies and early testing. Planning will capitalize on commercial solutions and non-traditional suppliers, and expand the role of warfighters and security, counterintelligence, and intelligence analysis throughout the acquisition process.

(2) Acquisition programs will be designed to facilitate capability enhancements by using open systems architectures and common, open, and consensus-based standards. An open system design supports sustainment and rapid integration of new or updated subsystems into the platform.

(3) To facilitate a flexible and rapid acquisition process, MDAs, program managers (PMs), and other relevant authorities will implement the processes described in Paragraph 3.2.

b. Decision Reviews.

The purpose of 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 policies outlined in Paragraphs (1) through (3) will guide decision reviews:

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

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

(3) Overarching Integrated Product Teams at the OSD 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 PM, Program Executive Officer (PEO), component acquisition executive (CAE), or DAE.

c. DoD Process Relationships.

Acquisition, requirements, and budgeting are closely related and must operate simultaneously in close coordination. Validated requirements provide the basis for defining the products that will be acquired through the acquisition system. The budgeting process determines DoD priorities and resource allocations and provides the funds necessary to execute planned programs. Adjustments may have to be made during a program's life cycle to keep the three processes aligned to ensure programs are executable and to adapt to evolving circumstances. Decisions in this context must consider mission area or portfolio considerations as well as those directly impacting the program under review.

3.2. FLEXIBLE IMPLEMENTATION.

a. MDAs will structure program strategies and oversight, phase content, the timing and scope of decision reviews, and decision levels based on the specifics of the product being acquired, including complexity, risk, security, and urgency to satisfy validated capability requirements.

b. PMs will "tailor-in" the regulatory information that will be used to describe their program at the MDD or program inception. In this context, "tailor-in" means that the PM will identify and recommend for MDA approval, the regulatory information that will be employed to document program plans and how that information will be formatted and provided for review by the decision authority.

(1) The PM's recommendation will be reviewed by the MDA and the decision will be documented in an ADM.

(2) MDAs will resolve issues related to implementation of this approach, and will coordinate, when necessary, with other regulatory document approval authorities to facilitate its implementation.

(3) Statutory requirements will not be waived unless permitted by the relevant statute.

c. Technologies successfully demonstrated in an operational environment via the Rapid Prototyping procedures in the Middle Tier Acquisition pathway, or other prototyping authorities, may be transitioned to major capability acquisition programs at decision points proposed by the PM and approved by the MDA. The technologies may provide the technical foundation for a formal acquisition program, incrementally improve a program capability in support of approved requirements, or support the development and insertion of more efficient program components. Similarly, products and technologies that have been successfully demonstrated via the Rapid Fielding procedures under the Middle Tier Acquisition pathway may provide the basis for a program developed in accordance with the procedures in this issuance. PMs for Middle Tier programs will identify and develop the statutory and regulatory information needed to facilitate an efficient pathway transition. DoDI 5000.80 provides additional direction for middle tier acquisitions.

d. The Defense Acquisition Guidebook (DAG), available online at <https://www.dau.edu/tools/dag>, provides the acquisition workforce with discretionary best practice that should be tailored to the needs of each program. The DAG is intended to inform thoughtful program planning and facilitate effective program management.

3.3. PROGRAM ACATS.

All major capability acquisition pathway programs are designated by an ACAT. The ACAT identifies the program's MDA, required processes, and documents. The details regarding ACATs, decision authority and associated policy are presented in Appendix 3A.

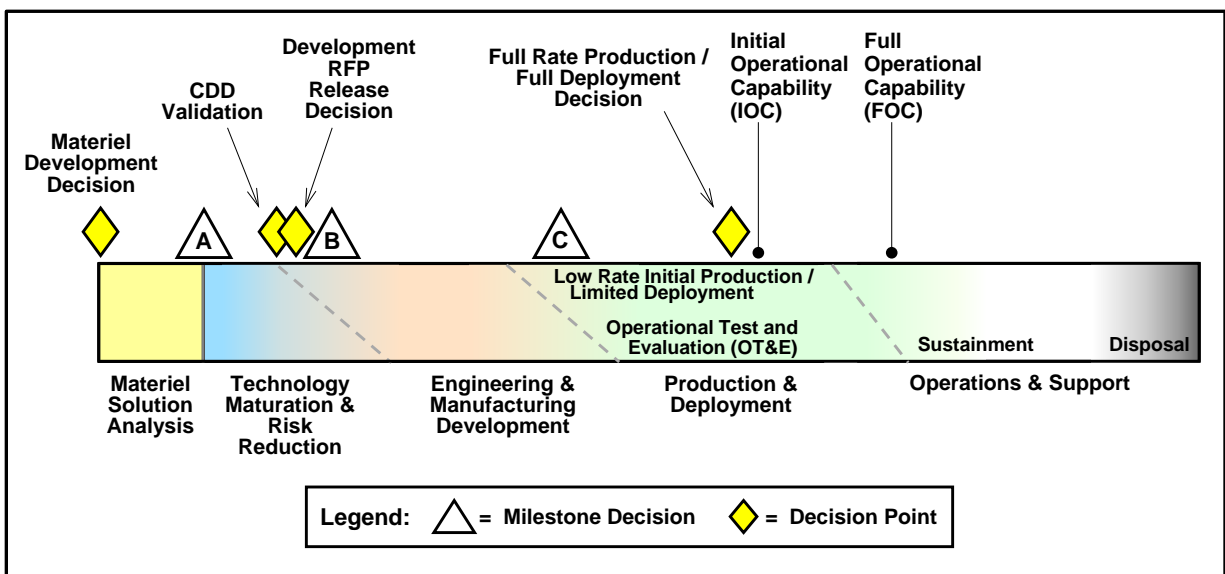
3.4. ACQUISITION PROCESS DECISIONS AND PHASES.

a. Acquisition decisions will be made at the lowest authorized level, commensurate with the ACAT and program risk, to ensure they are timely, and made by those with the greatest knowledge of the program.

b. Figure 2 depicts the major capability acquisition model. The paragraphs that follow describe the decision points and activity phases that apply to almost any acquisition.

c. Appendix 3B discusses the information requirements that apply throughout the phases and decision points, subject to PM and MDA decisions and statutory requirements.

Figure 2. Major Capability Acquisition Model.



3.5. MDD.

a. Purpose.

The MDD is the mandatory entry point into the major capability acquisition process and is informed by a validated requirements document (e.g., an initial capabilities document (ICD) or equivalent) and the completion of the analysis of alternatives (AoA) study guidance and the AoA study plan.

b. At the MDD Review.

The Director of Cost Assessment and Program Evaluation (DCAPE) (or DoD Component equivalent for ACAT II or below programs) will present the AoA study guidance, and the DoD Component will present the AoA study plan. For MDAPs, DCAPE issues the AoA study guidance, and approves the AoA study plan. The DoD Component will provide the plan to staff and fund program activities up to and including the next decision point, usually Milestone A.

c. Decisions.

The MDA will determine the acquisition phase of entry and the initial review milestone. MDA decisions will be documented in an ADM. The approved AoA study guidance and study plan will be attached to the ADM.

3.6. MSA PHASE.

a. Purpose.

The purpose of this phase is to conduct the AoA and other activities needed to choose the concept for the product to be acquired, to begin translating validated capability gaps into system-specific requirements, and to conduct planning to support a decision on the acquisition strategy for the product.

b. Phase Description.

(1) The MSA phase will be guided by the ICD and the AoA study plan. Phase activity will focus on identification and analysis of alternatives, measures of effectiveness, key trades between cost and capability, life-cycle cost, schedule, concepts of operations, and overall risk. The AoA will inform and be informed by affordability analysis, sustainment considerations, early systems engineering analysis, threat projections, and coalition interoperability as identified in the ICD.

(2) During this phase, the CAE will select a PM and establish a program office to complete the actions necessary to plan the acquisition program and prepare for the next decision point. The actions described in Paragraph 3.2.b. will be completed in time to support planning for the initial program milestone.

(3) MDAP MDAs will establish program goals consistent with the procedures in Paragraph 3C.3.(c)(1) of this issuance. An independent cost estimate (ICE) and independent technical risk assessment (ITRA) will be conducted before granting Milestone A approval for an MDAP.

(4) Product support (PS) and sustainment planning begin during this phase and support the determination of core logistics capability requirements.

(5) The phase ends when the DoD Component has completed the necessary analysis and the activities necessary to support a decision to proceed to the next decision point/phase in the acquisition process.

3.7. MILESTONE A.

a. Purpose.

(1) Milestone A approves program entry into the technology maturation and risk reduction (TMRR) phase, approval of the program acquisition strategy, and release of the final request for proposals (RFPs) for TMRR activities. A draft capability development document (CDD) approved by the DoD Component informs the acquisition strategy and the RFP for TMRR.

(2) Principal considerations include:

- (a) Justification for and the affordability and feasibility of the preferred military solution;
- (b) Identification of the technologies that must be matured during the TMRR phase;
- (c) The scope of the capability requirement trade space and an understanding of the priorities within that trade space;
- (d) Technical, cost and schedule risks, and the plans and funding to offset them during the TMRR phase;
- (e) A proposed acquisition strategy, including intellectual property (IP), program protection, and exportability and acquisition planning;
- (f) The test strategy;
- (g) A life-cycle mission data plan for each intelligence mission data-dependent program (including cyber) and the projected threat and its impact on the materiel solution.

b. At the Milestone A Review.

(1) The PM will present the acquisition strategy, the business approach, “Should Cost” targets, framing assumptions, an assessment of program risk and planned mitigation actions, and initial PS planning.

(2) For MDAPs, the DoD Component will present a quantitatively supported affordability analysis based on the resources projected to be available in the DoD Component portfolio(s) or mission area(s) associated with the program under consideration. Similar, appropriately-scaled affordability analyses will be required for all other programs. The analysis will demonstrate the DoD Component's ability to afford the program over its life cycle, and the DoD Component will demonstrate that the program will be fully funded within the Future Years Defense Program (FYDP).

(3) Pursuant to Section 2366a of Title 10, U.S.C., MDAs for MDAPs must determine, with a high degree of confidence, that the technology developed within the program will not delay the fielding target of the program. If the MDA determines that a technology related to a major system component will delay the program:

(a) The technology must be sufficiently matured and demonstrated in a relevant environment separate from the program, using the prototyping authorities in subchapter II of Chapter 144B of Title 10, U.S.C., or other authorities, as appropriate.

(b) The MDA must have an effective plan for adoption or insertion by the relevant program.

c. Decisions.

The MDA will approve the acquisition strategy to determine the materiel solution, the strategy for the TMRR phase, PM waiver requests, release of the final RFP for the TMRR phase, exit criteria required to complete TMRR, and entrance criteria for the engineering and manufacturing development (EMD) phase. The MDA will document decisions in an ADM.

3.8. TMRR PHASE.

a. Purpose.

The TMRR phase is guided by the draft CDD and the acquisition strategy. 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 includes a mix of activities intended to reduce program risks. These include the design and requirements trades necessary to ensure an affordable product and an executable development and production program. Close collaboration with the requirements community is essential and will inform development and validation of the CDD.

(2) The acquisition strategy will describe the overall approach to acquiring the capability and include the program schedule, risks, funding, business strategy, and an IP strategy. PS and sustainment planning continues during this phase and will include consideration of data rights. Program security and program protection requirements will be evaluated. Unless waived by the

MDA, a preliminary design review (PDR) will be conducted prior to Milestone B. This phase normally includes multiple competitive sources conducting technology risk reduction activity to demonstrate new technologies in a relevant environment. An ICE and an ITRA will be conducted for MDAPs, before granting Milestone B approval. Development testing will be guided by the test and evaluation master plan.

c. CDD Validation.

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.

3.9. DEVELOPMENT RFP RELEASE DECISION POINT.

a. Purpose and Objective.

(1) 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.

(2) The objective is to ensure that the program requirements to be proposed against are firm and clearly stated, that the risk of committing to development (and eventually production) has been adequately reduced, that program security has been accommodated, and the program strategy and business approach are structured to provide value to the government while treating industry fairly.

b. At the Release Decision.

The PM will summarize TMRR phase progress and results and detail the strategy for the EMD phase. Specific attention will be given to overall affordability, the strategy for maintaining competition throughout the program life cycle, source selection criteria, contract incentives, the IP strategy, threat projections, assessments of foreign ownership, control or influence (FOCI), and the use of a modular open systems approach (MOSA) to evolve systems capability and establish and maintain interoperability.

c. Decisions.

The MDA will approve the release of the final RFP for the EMD phase and determine the preliminary low-rate initial production (LRIP) quantity or, for an AIS, the scope of limited deployment at this decision point. Decisions resulting from the decision review will be documented in an ADM. The ADM will include specific criteria required for Milestone C approval including test and evaluation accomplishments, exportability and international acquisition planning, LRIP quantities or the limited deployment scope, affordability requirements and program goals, finalized sustainment metrics, and FYDP funding requirements.

3.10. MILESTONE B.

a. Purpose.

The Milestone B decision authorizes a program to enter into the EMD phase and commit the required investment resources to support the award of phase contracts. Requirements for this milestone may have been satisfied at the Development RFP release decision point; however, if significant changes have occurred between the two decisions that would alter the decisions made at the earlier point, those changes will be addressed at the Milestone B review.

b. At the Milestone B Review.

This review requires demonstration that all sources of risk have been adequately mitigated to support a commitment to design, development and production. Risk sources include, but are not limited to, technology, threat projections, security, engineering, integration, manufacturing, sustainment and cost risk. Validated capability requirements are required for all programs. Full funding in the FYDP, compliance with affordability/program goals demonstrated through technical assessments and ICEs are required for MDAPs and programs in other categories when directed.

c. Decisions.

The MDA will approve entry into the EMD phase and formally initiate the program by approving the acquisition program baseline (APB). The program decisions, EMD phase exit criteria, approval of the LRIP quantity, and specific technical event-based criteria for initiating production or fielding at Milestone C will be documented in an ADM.

3.11. EMD PHASE.

a. Purpose.

The purpose of the EMD phase is to develop, build, test, and evaluate a materiel solution to verify that all operational and implied requirements, including those for security, have been met, and to support production, deployment and sustainment decisions.

b. Phase Description.

(1) The program will complete all needed hardware and software detailed designs. A critical design review assesses design maturity, design build-to or code-to documentation, and remaining risks, and establishes the initial technical baseline. It will be used as the decision point that the system design is ready to begin pre-production prototype hardware fabrication or software coding with acceptable risk. If a preliminary design review prior to Milestone B was waived, it will be scheduled as early as possible during this phase.

(2) Developmental testing and evaluation provides hardware and software feedback to the PM on the progress of the design process and on the product's compliance with contractual requirements, effective combat capability, and the ability to achieve key performance parameters

(KPPs) and key system attributes (KSAs). The DoD Component's operational test organization will conduct independent evaluations, operational assessments, or limited user tests to provide initial assessments of operational effectiveness, suitability, survivability, and the ability to satisfy KPPs and KSAs. Opportunities to combine contractor and Government developmental testing should be maximized, and integrated developmental and operational testing will be conducted when feasible.

(3) The PM will finalize designs for PS elements and integrate them into a comprehensive support package that is documented in a PS Strategy (PSS). The program will demonstrate PS performance through appropriate verification means that satisfy the sustainment requirements within the MDA-approved program goals established at Milestone A.

(4) Training devices will be planned, funded, designed, and developed in parallel with the operational system to ensure that the training devices properly replicate the capability in development. The training strategy will be evaluated during testing and evaluation events.

(5) Release of any RFPs for the production and deployment (P&D) phase must be approved by the MDA. A current acquisition strategy and applicable elements of the RFP will be required to support this decision.

(6) The EMD phase will end when the design is stable; the system meets validated capability requirements demonstrated by developmental, live fire (as appropriate), and early operational testing; manufacturing processes have been effectively demonstrated and are under control; software sustainment processes are in place and functioning; industrial production capabilities are reasonably available; program security remains uncompromised; and the program has met or exceeds all directed EMD phase exit criteria and Milestone C entrance criteria per the MDA's direction. An ICE and an ITRA will be conducted for MDAPs before beginning LRIP.

3.12. MILESTONE C.

a. Purpose.

Milestone C is the point at which a program is reviewed for entrance into the P&D phase.

b. At the Milestone C Review.

The following information will typically be considered: the results of developmental tests and evaluations and any early operational test and evaluation; evidence that the production design is stable; the results of an operational assessment (if conducted); the maturity of the software; any significant manufacturing risks; the status of critical intelligence parameters and intelligence mission data requirements, relative to fielding timelines; and full funding.

c. Decisions.

The MDA's decision to approve Milestone C will authorize the program to proceed to the P&D phase, enter LRIP, or begin limited deployment for AISs, and award contracts for the phase.

d. High Cost First Article Combined Milestone B and C Decisions.

Some programs such as spacecraft and ships will not produce prototypes during EMD for use solely as test articles because of the high cost of each article. In that case, the first article produced will be tested and evaluated, and then fielded as an operational asset. The acquisition approach for these programs can be tailored by measures such as combining development and initial production investment commitments and a combined Milestone B and C. Additional decision points with appropriate criteria may be established for subsequent production commitments.

3.13. P&D PHASE.

a. Purpose.

The purpose of the P&D phase is to produce and deploy requirements-compliant materiel solutions to the receiving operating organizations.

b. Phase Description.

The P&D phase is guided by an updated CDD if required, the acquisition strategy, and the test and evaluation master plan. In this phase the product is produced and fielded or deployed for use by operational units.

(1) The phase includes a number of key events: LRIP, personnel training, completion of developmental test and evaluation (if required), initial operational test and evaluation, and the full-rate production (FRP) or full-deployment (FD) decision. In this phase, all system sustainment and support activities are initiated if not already begun, and the appropriate operational authority will declare initial operational capability (IOC) when the defined operational organization has been equipped and trained and is determined to be capable of conducting mission operations. “Should cost” management and other techniques will be used continuously to control and reduce costs.

(2) For MDAPs, and other programs on the Director of Operational Test and Evaluation (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 the decision to proceed beyond LRIP or limited deployment. If LRIP is not conducted for programs on the DOT&E oversight list, production representative test articles must be provided for the conduct of operational and live fire testing.

3.14. FRP DECISION OR FD DECISION.

The MDA will conduct an FRP decision review to assess the results of initial OT&E and initial manufacturing to determine whether to proceed to FRP. Proceeding to FRP requires control of the manufacturing process, acceptable performance and reliability, the establishment of adequate sustainment and support systems, and for MDAPs, an ICE and an ITRA. This decision will be informed by consideration of any new validated threat environments that might affect operational

effectiveness. The MDA may consult with the requirements validation authority as part of the decision making process to ensure that capability requirements are current. The MDA will document the results of the review in an ADM.

3.15. OPERATIONS AND SUPPORT (O&S) PHASE.

a. Purpose.

This phase executes the PSS, satisfies materiel readiness and operational support performance requirements including personnel training, and sustains the system over its life cycle, including disposal. The O&S phase begins upon fielding of the first system(s), which may precede IOC, and is based on an MDA-approved PSS.

b. Phase Description.

This phase includes two major efforts: sustainment and disposal. The MDA-approved PSS is the basis for the activities conducted during this phase.

(1) Sustainment.

During this phase the PM will deploy the support package and monitor its performance according to the PSS.

(a) The PM will ensure that resources are programmed; IP deliverables and associated license rights, tools, equipment, and facilities have been programmed and acquired to support each of the levels of maintenance that will provide PS; and necessary organic depot maintenance capability, consistent with statute and the PSS, are established. A successful program meets sustainment performance requirements without compromise to the security and integrity of the capability or service delivery, remains affordable, and continues to seek cost reductions by applying “should cost” management and other cost reduction techniques.

(b) During O&S, the PM 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 the PSS. Over the program life cycle, operational needs, training requirements, technology advances, evolving threats, process improvements, fiscal constraints, plans for follow-on systems, changes to the industrial base, or a combination of these influences may warrant revision to the PSS.

(c) When revising the PSS, the PM will revalidate the supportability analysis and review the most current PS requirements, senior leader guidance, and fiscal assumptions to evaluate system support changes or alternatives to 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, in accordance with the PSS. Disposal planning will include consideration of retirement, disposition, and reclamation.

APPENDIX 3A: ACATs

3A.1. PURPOSE.

This appendix provides the descriptions and dollar thresholds for the ACATs, and prescribes the policy for assignment of the MDAs.

3A.2. ACATS.

a. Categories.

An acquisition program will be categorized based on the criteria in Table 1. Table 1 contains the description and decision authority for ACAT I through ACAT III programs. The DAE or designee will review ACAT ID programs. Pursuant to Section 2430 of Title 10, U.S.C., the service acquisition executive (SAE) will review ACAT IB programs unless otherwise specified. The CAE will review ACAT IC programs. The CAE, or the individual designated by the CAE, will review ACAT II and ACAT III and below programs.

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

ACAT		
ACAT I	<ul style="list-style-type: none"> MDAP¹ (Section 2430 of Title 10, U.S.C.) <ul style="list-style-type: none"> 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 of more than \$525 million in Fiscal Year (FY) 2020 constant dollars or, for procurement, of more than \$3.065 billion in FY 2020 constant dollars MDA designation MDA designation as special interest³ 	ACAT ID: DAE ACAT IB: SAE ² ACAT IC: Head of the DoD Component or, if delegated, the CAE
ACAT II	<ul style="list-style-type: none"> Does not meet criteria for ACAT I Major system (Section 2302d of Title 10, U.S.C.) <ul style="list-style-type: none"> Dollar value: estimated by the DoD Component head to require an eventual total expenditure for research, development, and test and evaluation of more than \$200 million in FY 2020 constant dollars, or for procurement of more than \$920 million in FY 2020 constant dollars MDA designation (Section 2302 of Title 10, U.S.C.) 	CAE or the individual designated by the CAE ⁴
ACAT III	<ul style="list-style-type: none"> Does not meet dollar value thresholds for ACAT II or above Is not designated a “major system” by the MDA 	Designated by the CAE ⁴
<p>1. Unless designated an MDAP by the Secretary of Defense (SecDef), AIS programs⁵, Defense Business System programs, and programs or projects carried out using rapid prototyping or fielding procedures pursuant to Section 804 of Public Law (PL) 114-92, do not meet the definition of an MDAP.</p> <p>2. ACAT IB decision authority is assigned pursuant to Section 2430 of Title 10, U.S.C. Paragraph 3A.2.b. provides DoD implementation details.</p> <p>3. 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 thresholds cannot be designated as Special Interest.</p> <p>4. As delegated by the SecDef or Secretary of the Military Department.</p>		

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

Footnotes
<p>5. An AIS is 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: embedded as an integral part of a weapon or weapon system; used for highly sensitive classified programs (as determined by the SecDef) or other highly sensitive information technology programs (as determined by the DoD Chief Information Officer; 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 research, development, testing, and evaluation funding to total program acquisition costs or that requires significant hardware development). An AIS that breaches the dollar thresholds in Section 2302d of Title 10, U.S.C., as adjusted, is a “major system.”</p>

b. ACAT IB Programs.

(1) Pursuant to Subsection (d) of Section 2430, of Title 10, U.S.C., the SAE of the Military Department that is managing an MDAP reaching Milestone A after October 1, 2016 will be the MDA for the MDAP unless, based on one or more exceptions in the statute, the SecDef designates an alternate MDA. In accordance with DoDD 5135.02, the SecDef has delegated the authority to designate an alternate MDA for an MDAP to the USD(A&S).

(2) At least annually, at submission of the Program Objective Memorandum, each SAE will provide, in writing, sufficient information to allow the USD(A&S) to consider whether any of the bases for designation of an alternate MDA as set forth in Section 2430(d) of Title 10, U.S.C., apply. This information must be provided for all programs for which the Military Department anticipates an MDD or a Milestone A decision (or later milestone decision if this will be the program's first milestone) in the first year of the Program Objective Memorandum FYDP and that are estimated to require eventual total expenditures of funds for all increments that exceed the MDAP dollar value thresholds set in Section 2430 of Title 10, U.S.C., as adjusted and specified in Table 1.

(3) Programs, for which the SAE is the MDA by operation of Section 2430 of Title 10, U.S.C., will be designated within the DoD as ACAT IB programs to differentiate these programs from ACAT ID programs, where the USD(A&S) is the MDA, or ACAT IC programs, where the USD(A&S) as the DAE has delegated the DAE's decision authority to the SAE. Should the USD(A&S) designate the DAE or other official as the alternate MDA the ACAT IB program will be re-designated as ACAT ID.

(4) Pursuant to subparagraph (d)(3)(A) of Section 2430, of Title 10, U.S.C., for programs for which the USD(A&S) has designated an alternate MDA, the Secretary of the Military Department concerned, or designee, may request reversion of responsibility back to the SAE. The USD(A&S) must make a decision with regard to the Military Department's request within 180 days after receiving the request. In the event the MDA for the program reverts back to the SAE, either at the request of the Military Department or at the DAE's discretion, the program would revert from its ACAT ID designation to an ACAT IB designation.

(5) SAEs managing ACAT IB programs must continue to comply with all statutes that require information about an MDAP to be provided to OSD or the Office of the USD(A&S). For example, Section 2432 of Title 10, U.S.C., requires the SecDef to submit Selected Acquisition Reports (SARs) for MDAPs. For ACAT IB programs, the Military Departments must continue

to use the Defense Acquisition Visibility Environment system for preparation and management of APBs and SARs, to enable continued efficient and streamlined execution of Congressional reporting for all MDAPs, including ACAT IB programs, through the Principal Deputy Assistant Secretary of Defense (Acquisition Enablers).

(6) The Military Departments will use the Defense Acquisition Management Information Retrieval system for the ACAT IB program quarterly unit cost reporting required by Section 2433 of Title 10, U.S.C., and will continue to report other quarterly DAE Summary information.

(7) All programs that have been initiated by having entered the acquisition management system at either Milestone A or a later milestone before October 1, 2016, and that are designated as either an ACAT ID or ACAT IC program, will continue to follow the acquisition information and reporting requirements described in this issuance.

c. Program Re-categorization.

The MDA will consider re-categorization when at any point in a program there is program cost growth within 10 percent of the next highest ACAT level.

APPENDIX 3B: PROGRAM INFORMATION

This appendix identifies the information applicable to programs employing the major capability acquisition pathway and specifies the policy applicable to information selection.

3B.1. PROGRAM INFORMATION.

a. The tables described in Paragraphs 3B.1.a(1) through 3B.1.a (9) identify program information requirements, and have been placed online at <https://www.dau.edu/mdid/Pages/Default.aspx> to facilitate access to content:

- (1) Milestone and phase information requirements.
- (2) APB.
- (3) Statutory program breach definitions.
- (4) Recurring program reports.
- (5) Exceptions, waivers, and alternative management and reporting requirements.
- (6) Cost and software data reporting (CSDR).
- (7) Earned value management system (EVMS) application requirements.
- (8) EVMS reporting requirements.
- (9) Actions associated with Clinger Cohen Act compliance.

b. PMs must comply with the online requirements, consistent with the policy specified in this issuance. Requirements set out at <https://www.dau.edu/mdid/Pages/Default.aspx> are to be treated the same way as they would be if they were published in this document. Substantive changes to online content not required by law must be formally coordinated in accordance with the procedures in DoDI 5025.01. Substantive changes include any additional requirements that add to the financial, personnel, or administrative burden of any of the DoD Components.

3B.2. INFORMATION SELECTION.

The policy outlined in Paragraphs 3B.2.a. and 3B.2.b. will govern the applicability and selection of program information:

a. Statutory requirements must be satisfied unless the statute allows the requirement to be waived.

b. Regulatory requirements will follow a “tailored-in” approach, as described in Paragraph 3.2.b.

APPENDIX 3C: ADDITIONAL PROGRAM MANAGEMENT CONSIDERATIONS

3C.1. PURPOSE.

This appendix describes a broad range of policies and procedures applicable to the management of major capability acquisition programs.

3C.2. PROGRAM OFFICE STRUCTURE AND ORGANIZATIONS.

a. Program Office Structure.

It is a program manager'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 programs execute successfully. Program offices will be established prior to Milestone A or earlier as necessary. Program offices for MDAPs will be staffed in key leadership positions with military or DoD civilian employees qualified in accordance with DoDI 5000.66. Key leadership positions include the PM and deputy PM, and the other positions identified in DoDI 5000.66.

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 or international partners, and is funded by more than one DoD Component or partner during any phase of the acquisition process. In 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 DoD Components (i.e., those with a requirement for the program's products) support and participate with the lead DoD Component in managing the acquisition process.

(2) 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.

(3) DoD Components will neither terminate nor substantially reduce participation in joint MDAPs 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 or significantly increases the costs to the other participants in the program.

3C.3. PROGRAM MANAGEMENT RESPONSIBILITIES.

PMs direct the development, production, deployment, PS, sustainment, and supportability of new defense systems. Management activities will be designed to achieve the cost, schedule, and performance parameters specified in the MDA-approved APB, and include PS considerations. The tools outlined in Paragraphs 3C.3.a. through e. will be used to facilitate effective program planning and execution.

a. Acquisition Strategies.

(1) Overview.

The PM will develop and execute an approved acquisition strategy. This document is the PM's plan for program execution across the entire program life cycle.

(a) The acquisition strategy is a comprehensive, integrated plan that identifies the acquisition approach and key framing assumptions, and describes the business, technical, PS, security, and supportability strategies that the PM 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.

(b) The strategy should address capability requirements for system performance likely to evolve during the life cycle because of evolving technology, threat, or interoperability needs or to reduce program cost or schedule and enable technology refresh. The acquisition strategy defines the relationship between the acquisition phases and work efforts, and key program events such as decision points and reviews.

(c) The strategy must reflect the PM's understanding of the business environment; technical alternatives; small business strategy; costs, risks and risk mitigation approach; environment, safety, and occupational health (ESOH) risk and requirements management approach; contract awards; the incentive structure; test activities; manufacturing and quality approach and risks; production lot or delivery quantities; operational deployment objectives; opportunities in the domestic and international markets; foreign disclosure, exportability, technology transfer, and security requirements; and the plan to support successful delivery of the capability at an affordable life-cycle price, on a realistic schedule. Acquisition strategies are baseline plans for the execution of the program and should be prepared and submitted in time to obtain approval to support more detailed planning and the preparation of RFPs.

(d) The acquisition strategy is an approved plan; it is not a contract. Minor changes to the plan reflected in the acquisition strategy due to changed circumstances or increased knowledge are to be expected and do not require MDA pre-approval. Major changes, such as contract type or basic program structure, do require MDA approval prior to implementation. All changes should be noted and reflected in an update at the next program decision point or milestone.

(2) PS and Supportability Planning.

(a) The PM, with the support of the PS manager (PSM), will include PS and supportability planning, tests, evaluations, and quality reviews in the acquisition strategy and the integrated master plan/schedule.

(b) The PM uses PS analyses (e.g., failure modes, effects and criticality analysis; level of repair, source of repair; maintenance task, provisioning) to determine logistics product data contract and technical data requirements, logistics support analysis, and the maintenance concept (organic, contractor, or a combination).

(c) The acquisition strategy is the basis of contract data requirement lists and should consider providing for planning for incremental quality reviews of vendor/original equipment manufacturer deliverables.

(d) The acquisition strategy and the PSS should include the transition plan from interim contractor support to organic, contractor logistics support, or a combination of both. Based on the results of the product support business case analysis (PS BCA), the acquisition strategy should clearly document sustainment and O&S cost risk management, and the cost to reduce risk, thereby providing cost transparency and traceability throughout the life cycle.

(3) Business Approach.

(a) 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 (including security, FOCL, supply chain risks to acquisition, and industrial base concerns) 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.

(b) 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 that the government values, while also being realistically attainable. When risk is sufficiently reduced, PMs will consider the use of fixed-price contracts when the use of such contracts is cost-effective.

(4) Competition.

(a) The acquisition strategy will address how program management will create and sustain a competitive environment, from program inception through sustainment. Program management should use competition at various levels 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 program life cycle.

(b) Strategies to be considered include: competitive prototyping, dual sourcing, and a modular open systems approach that enables 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 those with disabilities.

(5) MOSA.

Pursuant to Section 2446a of Title 10, U.S.C., PMs are responsible for evaluating and implementing MOSA to the maximum extent feasible and cost effective. This approach integrates technical requirements with contracting mechanisms and legal considerations to support a more rapid evolution of capabilities and technologies throughout the product life cycle through the use of architecture modularity, system interfaces that are compliant with widely supported and consensus-based standards, if they are available and suitable, and appropriate business practices.

(a) In general, the acquisition strategy for a system should identify where, why, and how MOSA will be used in the program.

1. To enable incremental development, and to enhance competition, innovation, and interoperability, MDAPs that receive Milestone A or B approval after January 1, 2019, must be designed and developed with MOSA to the maximum extent practicable.

2. For an MDAP that uses MOSA, the acquisition strategy must clearly describe:

a. How MOSA will be used, including business and technical considerations.

b. The differentiation between the major system platform and major system components being developed under the program, as well as major system components developed outside the program that will be integrated into the MDAP.

c. The evolution of capabilities that will be added, removed, or replaced in future increments.

d. The additional major system components that may be added later in the life cycle.

e. How IP and related issues, such as technical data deliverables, will be addressed.

f. The system integration and system-level configuration management approach to ensure the system can operate in the applicable cyber threat environment.

(b) The MDA for an MDAP that uses MOSA must ensure that the RFPs for the EMD phase and the P&D phase describe the MOSA and the minimum set of major system components that must be included in the system design.

(c) Additional information about using MOSA appears at <https://www.dau.edu/aaf>.

b. Program Baseline Development and Management.

The APB documents the program cost, schedule, and performance baselines, and is the fundamental binding agreement between the MDA, the CAE if applicable, the PEO, and the PM. The PM is responsible for developing the APB. KPPs from the validated CDD are listed, verbatim, in the APB. The APB serves as the basis for reporting to the MDA through the DoD management information system.

c. Investment Management.

(1) MDAP Goal Development Procedures.

The procedures outlined in Paragraphs 3C.3.c.(1)(a) through (d) are applicable to all MDAPs initiated after October 1, 2017, without regard to what milestone initiates the program.

(a) Immediately following completion of the AoA and the final out brief to the Study Advisory Group, the MDA will provide the Joint Staff, the USD(A&S), the Under Secretary of Defense for Research and Engineering, and the DCAPE, a complete options matrix (Figure 3), and the access necessary to complete independent analysis in their area of responsibility. The analysis will address the AoA results and consider the aggregated risk regarding technical feasibility, cost, schedule, and affordability. The analytical results will be submitted to the MDA within 30 days of the AoA out brief to support a goal establishment meeting (GEM) and the MDA's goal decision.

(b) Within 30 days of the AoA out brief, the MDA will co-chair a GEM with the component Vice Chief of Staff or the Vice Chief of Naval Operations (or for ACAT ID programs, the Vice Chairman of the Joint Chiefs of Staff). The GEM will be supported by the organizations mentioned above and will discuss the analysis and the recommended cost, fielding, and performance goals.

(c) The MDA will consider the advice provided by the OSD and Joint Staff, approve the goals for cost, schedule, and performance, and document the decision in a program goals approval memorandum, similar to that portrayed in Figure 4. The MDA must approve the goals before funds are obligated for technology development, systems development, or production. The initial goals will inform MDAP initiation.

(d) The MDA is responsible for monitoring the goals. If the estimated procurement unit cost for the program is higher than the program cost target, or if the estimated date for IOC for the baseline description for the program exceeds the fielding target, the MDA will re-assess the program and, if justified, increase the program cost target or increase the fielding target prior to the next milestone or production decision in consultation with the OSD advisors identified in Paragraph 3C.3.c.(1)(a). The new goals must be approved before the program can proceed through a milestone event.

Figure 3. Options Matrix.

Need Identify the capability gap		
Analysis of Alternatives Provide a summary of the Analysis of Alternatives		
Options:*		
	Independent Assessment	DoD Component Assessment
Option Provide a description of the potential solution		
Rationale for Option Explain the reason the option was selected		
Operational Assessment Describe the option's impact on the operational performance gap		
Potential for Performance Growth Describe the plans for technical maturation, interoperability, and an evolutionary/modular open systems approach		
Technical Risk Provide a description of the potential technical risks and current technical risk levels for the proposed solution, including identification of any critical technologies or manufacturing processes that need to be matured		
Cost Provide an estimated procurement unit cost and sustainment cost		
Schedule Provide the date for the initial operational capability		
Affordability Provide a summary of the commodity and Component level affordability analyses		
Other Provide any other information deemed to be relevant		

*At least three options must be presented that represent differing assumptions about possible solutions, technical risks, cost, schedule, and affordability. These are not bounds to a program.

Figure 4. Sample Program Cost, Fielding, and Performance Goals Memorandum.

[LETTERHEAD]

SUBJECT: Program Cost, Fielding, and Performance Goals for <PROGRAM NAME>

Pursuant to section 2448a of title 10, United States Code, I establish the following program cost, fielding, and performance goals for the <PROGRAM NAME> program:

(i) Program Cost Goals:

Procurement Unit Cost: \$_____ (Base Year 20XX dollars) (BYXX\$)
 Operating & Support Cost: \$_____ (BYXX\$)

(ii) Program Fielding Goals:

Initial Operational Capability: Month YYYY

(iii) Performance Goals: The Technology Maturation, Prototyping, and Modular Open System goals will be consistent with the validated requirements and described in the draft acquisition strategy. [Note: Given the differences among MDAPs and development strategies, performance goals will vary. Consequently, the goals and the measurements associated with achieving them should be tailored to the program.]

(MDA Signature Block)

_____ }

(2) Cost Baseline Control and Use of “Should Cost” Management.

For MDAPs, it is DoD policy to budget to the DCAPE ICE unless an alternative estimate is specifically approved by the MDA. PMs will also develop a “should cost” estimate as a management tool to control and reduce cost. PMs should not allow the ICE to become a self-fulfilling prophecy.

(a) “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.

1. “Should cost” analysis can be used during contract negotiations, particularly for sole source procurements, and throughout program execution including sustainment. PMs 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.

2. Realized “should cost” savings will be retained at the lowest organizational level possible and applied to priority needs.

3. “Should cost” applies to programs in all ACATs, in all phases of the product’s life cycle, and to all elements of program cost.

(b) 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. PMs will report progress against “should cost” goals via OSD- or DoD Component-specified procedures.

(3) EVM.

(a) 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 with discrete work scope.

(b) 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.

(c) 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. Tables accessible at <https://www.dau.edu/mdid/Pages/Default.aspx> summarize EVM applicability and reporting requirements.

d. Risk Management.

(1) PMs are responsible for prioritizing programmatic risks and mitigating them 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. The PM will consider the risk management techniques outlined in Paragraphs 3C.3.d.(1)(a) through (l):

(a) Prototyping at the system, subsystem, or component level; and competitive prototyping, where appropriate.

(b) Modeling and simulation, to include the need for development of any new modeling and simulation tools to support a comprehensive risk management and mitigation approach.

(c) Technology demonstrations and decision points to discipline the insertion of planned technologies into programs or the selection of alternative technologies provide additional discussions of technical management activities.

(d) Intelligence analyses, data dependencies, and threat projections.

(e) Multiple design approaches.

(f) Alternative designs, including designs that meet requirements but with reduced performance.

(g) Phasing program activities or related technology development efforts to address high-risk areas early.

(h) Manufacturability.

(i) Industrial base availability and capabilities (further discussed in Paragraph 3C.5.).

(j) Analysis or detailed identification of sub-tiers in the prime contractor supply chain.

(k) Independent risk assessments by outside subject matter experts.

(l) Providing schedule and funding margins for identified risks.

(2) The PM is responsible for integrating ESOH considerations into the decision-making process.

(a) Prior to exposing people, equipment, or the environment to known system-related hazards, PMs are responsible for documenting the associated risks and for ensuring that ESOH 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. User-representative approval is required prior to high and serious risk acceptance. For joint programs, the ESOH risk acceptance authorities reside within the lead DoD Component.

(b) The PM will manage schedule and cost risks associated with statutory requirements in PL 91-190 and Executive Order 12114, and other statutes and regulations as applicable, to assure timely production, testing and fielding events. The PM will manage program risks from compliance with other ESOH requirements, such as hazardous materials regulations, impacting system performance and readiness, including those impacting international acquisition and exportability. Paragraphs 3D.2.b.(5)(a) and 3D.3.c.(6) provide additional information.

e. Configuration Steering Board (CSB).

The CAE for each DoD Component will form and chair a CSB with broad executive membership, as identified in Section 814 of PL 110-417, as amended.

(1) The CSB will meet at least annually to review all requirements changes, critical intelligence parameter changes, and any significant technical configuration changes for ACAT I programs in development, production, and sustainment that have the potential to result in cost and schedule impacts to the program. De-scoping options will also be considered. CSBs will review potential requirements changes and propose to the requirements authority for validation those changes that may be necessary to achieve affordability or program goal constraints or that will result in a more cost effective product. Changes that increase cost will not normally be approved unless funds are identified and schedule impacts are addressed.

(2) If the SAE determines in writing that there have been no changes to program requirements or adversary advancements against critical intelligence parameters in the preceding year, the CSB is not required to meet.

3C.4. INTERNATIONAL ACQUISITION AND EXPORTABILITY.

a. International Acquisition and Exportability Planning.

PMs will integrate international acquisition and exportability planning into the program's acquisition strategy beginning at the entry milestone and continuing through all phases of the acquisition process. PMs will:

(1) Design the system for exportability to foreign partners, except when the program has an MDA-approved waiver allowing for a U.S.-only design. PMs for MDAPs pursuing a U.S.-only design and not planning for system export require an MDA-approved exportability design waiver which must be reviewed at each milestone. If a program has been approved for a waiver for a U.S.-only design, the MDA will notify the USD(A&S) and the requirements validation authority.

(2) Plan for the demand and likelihood of cooperative development or production, and foreign sales (e.g., direct commercial sales or foreign military sales), early in the acquisition process, and consider U.S. export control laws, regulations, and DoD policy for foreign transfers when formulating and executing the acquisition strategy in accordance with DoDI 2040.02. In preparing for an international acquisition effort, PMs should consult with the appropriate technology security and foreign disclosure authorities (e.g., a principal disclosure authority or designated disclosure authority) to determine whether classified or controlled unclassified information can be disclosed to other governments or international organization participants. Failure to consider security requirements prior to obtaining foreign commitments on involvement can result in program delays at critical stages of the program.

(3) Pursue cooperative opportunities and international involvement throughout the acquisition life cycle to enhance international cooperation and improve interoperability in accordance with DoDI 2010.06.

(4) Ensure that all efforts to design and implement exportability to foreign partners are consistent with Sections 2357 and 2457 of Title 10, U.S.C., and Section 1049 of PL 115-232, and other applicable statutory authority.

b. Exportability and International Acquisition Roadmap Study.

For systems with export markets, the programs must conduct an exportability roadmap study beginning no later than Milestone B. Additional guidance regarding the content of the study is included in the DAG.

c. International Cooperative Program (ICP) Management.

(1) An ICP is any acquisition program or technology project that includes participation by the United States and one or more foreign nations, through an international agreement, during any phase of a system's life cycle. All ICPs will consider applicable U.S.-ratified materiel international standardization agreements in accordance with the Chairman of the Joint Chiefs of Staff Manual for the Operation of the Joint Capabilities Integration and Development System (JCIDS), and fully comply with foreign disclosure, export control, technology transfer, program protection, and all applicable security requirements. Programs containing classified information and/or controlled unclassified 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. When pursuing ICPs, staff members are encouraged to use the streamlined agreement procedures overseen and managed by the USD(A&S).

(2) DoD Components will notify and obtain DAE approval before terminating or substantially reducing MDAP participation in ICPs under signed international agreements. The DAE may require the DoD Component to continue to provide funding for the program. A substantial reduction is defined as a funding or quantity decrease that impacts program viability or significantly increases costs to the other program participants.

(3) Foreign military sales or direct commercial sales of major defense equipment prior to successful completion of operational test and evaluation require USD(A&S) approval (i.e., a Yockey Waiver).

3C.5. 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 program life cycle to provide feedback and updates. The objective is to ensure that the DoD 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.

(6) Avoid, to the maximum extent practicable, exposure to FOCI risks associated with adversary nations.

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, FOCI concerns, 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 DoD-level industrial base decisions.

3C.6. RECORDS MANAGEMENT.

PMs must comply with the records management requirements of Chapter 31 of Title 44, U.S.C. and DoDI 5015.02 for the information created, collected, and retained in the form of electronic records. DoDI 5000.82 provides additional guidance on records management for programs containing information technology.

APPENDIX 3D: PRODUCT SUPPORT

3D.1. PURPOSE.

This appendix describes the application of PS planning, policies, and procedures to provide supportability and sustainment over the program life cycle. It also describes the elements of the PS approach needed to achieve desired materiel readiness outcomes and reduce total life-cycle costs.

3D.2. PS AND SUSTAINMENT ACROSS THE LIFE CYCLE.

Sustainment planning and O&S cost affordability are an integral element of the capability requirements and acquisition process from program inception, including requirements outlined in Sections 2334, 2337, 2337a, 2366a, 2366b, 2366c, 2441, 2443, 2448a, and 2474 of Title 10, U.S.C., and in the JCIDS Manual, Annex D, Sustainment KPP Guide.

a. DoD Components, Service resource managers, and PEOs ensure that early program development and design includes affordable readiness and maintainability, including the integrated risk management of systems engineering, PSSs, and O&S costs as reflected in the AoA and acquisition strategies. Additionally, capability portfolio management and affordability determination processes inform DoD Component cost positions and program life-cycle estimates, requirements, acquisition strategies, and PS strategies.

b. As the total life-cycle manager, the PM, with the support of the PSM, will develop and implement an affordable and effective performance-based support package that satisfies the statutory requirements outlined in Paragraphs 3D.2.b.(1) through (7):

(1) Performance-Based PSSs.

The following will be conducted pursuant to Section 2337 of Title 10, U.S.C.

(a) Support Packages.

Implement performance-based support packages that utilize performance metrics. Support packages are based on the output of a PS BCA, and are intended to satisfy warfighter relevant performance requirements that facilitate enduring and affordable sustainment. They will use, track and adjust appropriate metrics to meet warfighter operational support requirements over the system life cycle, and include the best use of public and private sector capabilities through government/industry partnering initiatives, in accordance with statutory requirements.

(b) PS BCA.

The PS BCA validates the support package, and it is the means to tailor a PSS by weighing cost benefits and identifying key risks which enable appropriate trade-off analyses. Paragraph 3D.3.c.(1) provides additional details.

(c) PSS.

Detailed in Paragraph 3D.3. of this appendix, the PSS is the principal document governing the system's product support planning and sustainment. Support packages are documented within the PSS.

(2) Government Owned Inventory.

Ensure that PS arrangements for the weapon system describe how such arrangements will ensure efficient procurement, management, and allocation of existing government-owned parts inventories prior to use and to prevent unnecessary procurement of such parts as required by Section 2337 of Title 10, U.S.C. When executing commercial PS strategies, programs should draw on existing on-hand and due-in government inventory prior to procuring items from commercial providers. The PM will coordinate with cognizant government inventory managers to ensure they are aware of the reduction in demand. This will ensure stocking levels are adjusted to reflect reduced future demand given the program's planned reliance on commercial sources of supply.

(3) Reliability, Availability, and Maintainability (RAM) Improvement.

Pursuant to Section 2337a of Title 10, U.S.C., with significant refinement after Milestone C and IOC, PMs are to develop a RAM improvement strategy, at an affordable cost, that will utilize failure trend analyses, updated failure modes, effects and criticality analysis (or defect tracking for software), and other engineering data sources derived during the systems engineering process in accordance with DoDI 4151.22 and DoDD 4151.18. The RAM improvement strategy will minimize total life-cycle cost and employ the full spectrum of maintenance support structures available to sustain military materiel including organic or unique military capabilities, performance based support packages in accordance with Paragraph 3D.2.b.(1), commercial sector support, partnering, and competition as applicable.

(4) At the MDD.

(a) Early and Continuous Consideration of Sustainment Factors.

Starting at MDD, with significant refinement by program inception, sustainment factors will be given full consideration at all key acquisition decisions throughout the program life cycle. Consideration will include appropriate measures to reduce O&S costs, and to manage sustainment risks by addressing supportability early in system design and development, pursuant to Section 2337a of Title 10, U.S.C. The continuous consideration of sustainment factors will lead to risk and cost reduction activities.

(b) PSS Development and Implementation.

The PSS satisfies the statutory requirement in Section 2337 of Title 10, U.S.C. Paragraph 3D.3. details PSS requirements and planning factors. Commencing at MDD and updated throughout the life cycle, an affordable and effective performance-based support package will be developed and employed to maximize competition; improve materiel availability, operational availability, reliability, and maintainability; and reduce operation and

sustainment costs across the life cycle. Pursuant to the sections of Title 10, U.S.C., identified in Subparagraphs 1. through 6., and in accordance with this issuance, the support package will be the basis for all sustainment efforts to achieve and sustain warfighter requirements and describe:

1. Core logistics capability pursuant to Section 2464;
2. Depot-level maintenance of materiel pursuant to Section 2466;
3. Centers of industrial and technical excellence designation and public-private partnerships pursuant to Section 2474;
4. IP strategy with the respective technical data rights pursuant to Subsection (e) of Section 2320;
5. Acquisition strategy requirements related to logistics, maintenance, and sustainment, pursuant to Sections 2431a(c)(2)(J), 2464, and 2466; and in accordance with Paragraph 3C.3.a.(2) of this issuance;
6. Requirements related to energy factors such as energy supportability, resilience, and conservation pursuant to Section 2926.

(5) At Milestone A or the Initial Program Milestone.

(a) ESOH.

PMs will address programmatic environment, safety, and occupational health evaluation requirements throughout the program life cycle. PMs will manage hazardous materials in accordance with Aerospace Industries Association National Aerospace Standard 411, and National Aerospace Standard 411-1, tailored if necessary to meet their program's needs.

(b) Software Product Support Planning.

Software product support planning begins at program inception and continues throughout the program life cycle. The PSM is required to coordinate with the software development lead to determine what technical data is required to develop a best value support package that factors in quality, cybersecurity, risk management framework, technology refresh, and deployment over the program life cycle. Paragraph 3D.3.c.(7) of this appendix provides additional details.

(c) PS Assessments and Refinements.

Continuously monitor and perform modifications to the PS arrangement to correct any trends that negatively impact availability and cost. Assessments of PS performance are also included to assist PMs, PSMs, system operators and maintainers, resource sponsors, and materiel enterprise stakeholders, take corrective action to prevent degraded materiel readiness and O&S cost growth on a recurring basis, no less than every 5 years, pursuant to Section 2337 of Title 10, U.S.C.

(d) Competition in Sustainment.

Competition or the option of competition will be considered at the prime and subcontract levels for large and small business, and system and sub-system levels pursuant to Section 2337 of Title 10, U.S.C., and PL 111-23.

(e) Core Capability.

Record the results and resolution of the core logistics assessment pursuant to Section 2366a of Title 10, U.S.C., detailed in the Milestone and Phase Information Requirements Table at <https://www.dau.edu/mdid/Pages/Default.aspx>.

(f) CSDR.

Throughout the program life cycle, DoD Components will require CSDR on all sustainment efforts and contracts, including government sustainment efforts that exceed the cost reporting thresholds. Include identification of the cost reporting thresholds and additional CSDR requirements for sustainment programs pursuant to Section 2337a of Title 10, U.S.C., and in accordance with DoDI 5000.73.

(g) Energy Resiliency.

The PM balances the energy performance of a system with the provisioning of energy to sustain required forces/systems by the operational commander in relevant threat environments in accordance with the JCIDS Manual Energy KPP Guide. Pursuant to Section 2926 of Title 10, U.S.C., the energy KPP identifies energy demands and supply relationships.

(h) Supply Chain Risk Management (SCRM).

The PM will perform SCRM and supply chain threat assessments that provide an analytic foundation for counterintelligence to support defense acquisitions. SCRM should include cybersecurity of SCRM and item unique identification-enabled serialized item management (in accordance with DoDI O-5240.24 and the Threat Summary described in Annex G of the JCIDS Manual). No source may be excluded from a procurement based upon SCRM considerations absent proper exercise of appropriate legal authority. Any such exclusion must be coordinated with and approved by the contracting officer and counsel.

(i) Critical Sustainment Cost Driver Management.

Pursuant to Section 2443 of Title 10, U.S.C., and in support of the TMRR, EMD, and P&D phases, DoD Components will ensure that solicitations to be used in weapon system procurements include criteria for sustainment factors principally affected by design and development, and that those criteria receive ample emphasis in source selection. Critical sustainment cost drivers include:

1. Manpower. Includes total life cycle funding requirements for military, government, and contractor manpower. The future impact of contractor logistics support and

interim contractor support will be determined with required annual operations and maintenance funding.

2. Parts. Includes the total life-cycle funding requirements for parts production and manufacturing, contract and organic repair of spares, contract depot level repairable or line replaceable unit repair start date, and the transition start and end dates to begin organic depot repair capability.

3. Fuel. Denotes the program's methodology for improving the fuel efficiency of the system, consistent with mission requirements, to: reduce the size of the fuel logistics systems; reduce the burden high fuel consumption places on agility; and reduce operating costs, pursuant to Sections 2911 and 2441 of Title 10, U.S.C., and in accordance with the JCIDS Manual, to assess actual fuel consumption compared to projected fuel consumption as demonstrated in tests or operations.

(j) Integrated PS.

To provide for integrated PS, determine and update as necessary, the program's mix of government and industry providers supported by appropriate analyses, because PS integrators and PS providers may be organic, commercial or a combination pursuant to Section 2337 of Title 10, U.S.C.

(k) IP.

Determine necessary IP including technical data package deliverables, method of delivery, and associated license rights consistent with the program's IP strategy, pursuant to Sections 2320, 2322, and 2460 of Title 10, U.S.C.

(l) Metrics.

Perform sustainment and energy metrics assessment mapping to the Sustainment and Energy KPPs and Sustainment KSAs to manage sustainment performance in accordance with the JCIDS Manual and DoDI 3110.05.

(6) At Milestone B.

(a) Corrosion Prevention and Control (CPC).

As part of the corrosion prevention and mitigation planning required by Section 2228 of Title 10, U.S.C., incorporate DoDI 5000.67-required CPC maintenance processes to mitigate the impact of corrosion on materiel readiness and sustainment costs. Pursuant to Section 2366b of Title 10, U.S.C., DoD Components will identify and evaluate sustainment costs, including the costs related to corrosion prevention, throughout the life cycle.

(b) Counterfeit Material Prevention.

Implement a risk-based process to prevent counterfeit material from entering into the DoD supply chain and to prevent the DoD acquisition of counterfeit material, pursuant to PL

112-81, and in accordance with DoDI 4140.67, and Sections 252.246-2007 and 252.246-2008 of the DFARS.

(c) Demilitarization and Disposal Planning.

1. In accordance with Volumes 1 through 3 of DoD Manual 4160.28, ensure compliance with statutory requirements to develop a disposal plan to include demilitarization and controlled inventory item coding of system, subsystems, or components, with sufficient lead time before the disposal or retirement of the first asset.

2. Pursuant to Section 2366b of Title 10, U.S.C., the DoD Component's identification and evaluation of life-cycle sustainment costs prior to Milestone B will include disposal of the program.

(d) Diminishing Manufacturing Sources and Material Shortages (DMSMS) and Obsolescence Management.

Pursuant to Section 803 of PL 113-66, implement a risk-based and proactive DMSMS/Obsolescence Management Plan to monitor materials, technologies, and items throughout the program life cycle. Update the DMSMS and Obsolescence Management Plan and strategy on a recurring basis, no less than every 5 years. Implement cost-effective resolutions of DMSMS/obsolescence issues before they negatively impact the program. Ensure identification of obsolete parts in specifications and develop plans for suitable replacements as part of the program's plan.

(e) Financial Improvement and Audit Readiness.

Ensure program office internal controls are established at Milestone B for financial systems reporting processes (specifically those supporting logistics information systems pursuant to PL 112-239 and Section 524 of Title 40, U.S.C.) to support overarching supply accountability for all classes of supply.

(f) "Should Cost" Management.

Utilize a management and analysis approach to identify and implement system and enterprise sustainment cost reduction initiatives. "Should cost" targets will be established and reviewed annually based on analysis of acquisition sustainment costs and O&S cost element drivers. PMs will capture PS metrics and cost data in DoD Component- and DoD-level information systems, and track performance against should-cost targets, pursuant to Section 837 of PL 115-91 and as implemented in Section 215.407-4 of the DFARS.

(7) System Modifications.

At Milestone C and beyond, ensure initiations of system modifications, as necessary, to improve performance, enhance sustainability, and reduce ownership costs, is consistent with limitations prescribed in Section 2244a of Title 10, U.S.C.

c. Additionally, the PM and PSM will validate the support package considerations outlined in Paragraphs 3D.2.c.(1) through (7) through a PS BCA:

(1) Software PS Planning.

(a) As defined in Section 252.227-7014 of the DFARS, identification of how and when noncommercial computer software, noncommercial computer software documentation, and other material and activities required to maintain and sustain the software after IOC (for programs not using the Software Acquisition Pathway), will be provided to the government to enable life-cycle software management with necessary data rights and rights in computer software and/or computer software documentation.

(b) Identification of the relevant plans that will be leveraged to discuss life-cycle software management efforts (e.g., software development plan (specification number DI-IPSC-81427 B) and software transition plan (specification number DI-IPSC-81429 A)).

(2) Defense Logistics Agency (DLA) Storage and Distribution Capacity.

Ensure PMs responsible for renewal of sustainment contracts that include public-private partnerships with DoD maintenance depots, when supported by a PS BCA analysis, will include the use of DLA storage and distribution capacity in the terms of renewal public-private partnership arrangements and negotiate the transfer of government-owned inventory from commercial to DLA facilities, as specified in the arrangement.

(3) Inventory Accountability.

Ensure sustainable and auditable inventory processes that produce accurate accountability of DoD-owned assets with a full reconciliation to the financial records. Determine a baseline physical count for all DoD-owned assets (inventory/operating materials and supplies/equipment/real property), including both government property being managed by a contractor and that is being furnished to a contractor. Maintain and fully reconcile accountability of the inventory baseline in the financial records and the system of records designated for DoD-owned assets, with the location, quantity, and current condition of all unconsumed DoD-owned assets in the designated system of record; and internal controls for accountability of all items moving in or out after establishing the baseline.

(4) Unique Automatic Test Equipment (ATE).

Minimize unique ATE by utilizing designated DoD automatic test system families for all ATE hardware and software in DoD field and depot operations. Leverage common commodities (component items, support equipment, and support items) to the maximum extent possible before pursuing unique solutions to reduce support cost and logistical impacts.

(5) Facilities and Real Property.

Planning for facilities management of real property investments (facilities and infrastructure) necessary for training, operations and sustainment support will incorporate value engineering in accordance with DoDI 4245.14.

(6) Weapons System PMs.

As defined in Volume 3 of DoD Manual 4140.01, weapons system PMs, with Military Department and DLA participation, as appropriate:

(a) Develop and select performance-based materiel support strategies that optimize total system and materiel availability while minimizing O&S costs and logistics footprint.

(b) Integrate weapon system-oriented approaches with commodity- or force-oriented approaches while taking into consideration existing strategic supplier alliances to derive the best value blend of existing and evolving, organic and commercial, weapon system-unique and common support structures, and:

1. Give consideration to existing organic supplies.

2. Develop performance arrangements with organic, public sector or government support providers and performance contracts with support providers that ensure weapon systems and equipment are fully supported to meet the established sustainment objectives prior to the system's IOC.

(7) Support.

Support strategies to meet dependencies on intelligence data and Intelligence Community-provided data sources.

3D.3. PSS.

The PSS satisfies the statutory requirement of Section 2337 of Title 10, U.S.C., and the regulatory requirement in Paragraph 3D.2.b.(1)(c) of this appendix. PMs for all programs are responsible for developing and maintaining a PSS to document the support package, beginning at the Development RFP Release Decision Point and throughout the program life cycle. The PSS outlines the execution of the support package and will describe sustainment requirements in system design and the technical, business, and management activities to develop, implement, and deliver a support package that achieves effective and affordable operational materiel readiness outcomes. The acquisition strategy will also include an overview of the PSS and sustainment-related contracts.

a. The USD(A&S), or as designated, will approve the PSS for an ACAT ID program, a USD(A&S)-designated priority business system, or a special interest program.

b. The CAE, or designee, will approve the PSS for an ACAT IB, or below, program; or upon USD(A&S) formal delegation of an ACAT ID program to ACAT IC through an ADM. The PSS will be updated at each milestone and at specified decision points throughout the program life cycle, on a recurring basis, no less than every 5 years, and include all integrated PS elements. PSS updates requiring CAE approval must reflect the increased maturity of the support package, current risks, and any cost reduction activities. Additional decision points include planned and

then implemented major modifications to the system and when there are changes to the support package including current risks and cost reduction activities.

(1) At Milestone A, the PSS will focus on development of sustainment metrics as discussed in Paragraph 3D.4. in this appendix to influence design and the support package, and denote actions that can be taken prior to Milestone B to reduce future O&S costs, including software product support. Planning will use factors and assumptions consistent with those used in the AoA and affordability analysis, or justify any deviation from those factors and assumptions.

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

(3) At Milestone C, the PSS will focus on ensuring operational supportability and verifying performance.

(4) At the FRP decision or FD decision, the PSS will focus on how sustainment performance is measured, managed, assessed, and reported; and the actions to adjust the support package to ensure continued competition and cost control while meeting warfighter mission requirements.

(5) After IOC, the PSS is the principal document governing the system's sustainment. Programs will update the plan whenever there are major modifications to the system or changes to the support package, or every 5 years, whichever occurs first, supported by appropriate analyses; sustainment metrics data; sustainment costs; system components or configuration, both hardware and software; environmental requirements; and disposal plans or costs.

c. The PSS will include the annexes outlined in this paragraph:

(1) PS BCA.

(a) The PM will attach relevant assumptions, constraints, and analyses used to develop the support package in accordance with Paragraph 3D.2.b.(1)(b) of this appendix.

(b) DLA will participate in supply support-related PS BCAs by developing and providing data for ACAT I, II, and III programs.

(c) PSMs will revalidate analyses based on changes to the assumptions, constraints, and operating environment, or every 5 years, whichever occurs first. Level of repair analysis is a key PS analysis required to develop a best value support package.

(d) The outputs of an economic level of repair analysis and sensitivity analysis results in a least cost maintenance decision alternative. This data can be used to then evaluate risk sensitivity analysis to conduct trade analysis to develop a BCA with a recommended best value support package, not necessarily the least cost alternative.

(2) Core Logistics Analysis.

The requirement for core logistics capability and the workload to sustain those capabilities are defined in Section 2464 of Title 10, U.S.C.

(a) The process to define the numerical magnitude of the workload is documented in DoDI 4151.20. By the entry milestone, the DoD Component will document its determination of applicability of core depot-level maintenance and repair capability requirements in the PSS pursuant to Section 2366a of Title 10, U.S.C. For Milestone B, the PM will attach the program's estimated requirements for maintenance, repair and associated logistics capabilities and workloads to the PSS, pursuant to Section 2366b of Title 10, U.S.C. Pursuant to Section 2464 of Title 10, U.S.C., the program's maintenance planning will ensure that core depot-level maintenance and repair capabilities and capacity for a system's hardware and software are established not later than 4 years after IOC. The PM will ensure that a depot source of repair designation is made not later than 90 days after the critical design review. Before entering into a contract for LRIP, the supportability analysis must include detailed requirements for core depot-level maintenance and repair capabilities, and associated sustaining workloads required to support such requirements.

(b) Program plans will include the use of DLA-operated storage and distribution facilities where collocated with the DoD Component's selection of organic depot maintenance as identified in Paragraph 3D.2.c.(2).

(3) Replaced System Sustainment Plan (RSSP).

(a) Pursuant to Section 2437 of Title 10, U.S.C., and in accordance with DoDI 4160.28, Volumes 1 through 4 of DoD Manual 4160.21, and DoD Manual 4160.28, the RSSP will be included in the PSS by Milestone B and updated appropriately throughout the life cycle when the PSS is reviewed and whenever there are significant schedule changes to the replacement system. The replacement system PM will coordinate with the legacy system PM when developing and updating the RSSP.

(b) The DoD Component will ensure that the legacy system RSSP is included in the replaced system's PSS. The RSSP's purpose is to mitigate risk and gaps between the disposal of a legacy system and the fielding of a replacement system in accordance with the online Milestone and Phase Information Requirements table at <https://www.dau.edu/mdid/Pages/Default.aspx>.

(4) Preservation and Storage of Unique Tooling Plan.

For MDAPs, the plan, as outlined and required by Section 815 of PL 110-41, 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.

(5) IP Strategy.

IP strategy documentation originates in the acquisition strategy, transitions to the PSS during the O&S phase, and will be updated appropriately during the O&S phase in accordance with the milestone and phase information requirements table online at <https://www.dau.edu/mdid/Pages/Default.aspx>.

(6) Programmatic ESOH Evaluation.

This annex will explain how the program is executing the requirements in Paragraphs 3C.3.d.(2) and 3D.2.b.(5)(a) to manage ESOH risks and requirements across the life cycle. This annex will incorporate a summary of the current hazard tracking data with risk levels, prohibited and restricted hazardous materials usage and initiatives, and PL 91-190/Executive Order 12114 planning and compliance status, including military construction and installation management requirements.

(7) Software PSS.

Beginning with the PSS that supports a Milestone B decision, the PSS must include the program's software PSS. It should reflect results of the PDR and the O&S cost risk determined during TMRR. The software PSS is documented as a section within the body of the PSS or as a separate annex. It is updated appropriately throughout the program life cycle.

(8) Additional Annexes.

PMs will consider including additional annexes or reference other documents in the PSS. Examples include:

(a) System Disposal Plan.

In accordance with DoDI 4160.28, Volumes 1 through 4 of DoD Manual 4160.21, and DoD Manual 4160.28, the program's system disposal plan will be included in the PSS before Milestone B and updated appropriately throughout the program life cycle.

(b) Facilities Management Plan.

P&D planning should include a facilities management plan that details support for warfighting capability and may include temporary or permanent facilities necessary for operations and support. During P&D Phase, the acquiring organization provides the warfighter with the needed capability, to include any required training, spares, technical data to include known hazards and accepted mishap risks, computer software, temporary or permanent facilities and/or infrastructure, support equipment, maintenance, or other logistics support necessary for operation.

(c) CPC.

Paragraph 3D.2.b.(6)(a) provides details on CPC planning.

3D.4. SUSTAINMENT METRICS.

The sustainment and energy KPPs are as critical to a program's success as cost, schedule, and performance. PMs will use availability, sustainment, and energy 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, maintainability, and energy supportability, resilience, and conservation of such systems at a reduced cost.

a. The materiel availability KPP, as defined in the JCIDS Manual Sustainment KPP Guide, will be based on the entire system inventory, including attrition reserve and prepositioned systems, and covers the timeframe from placement into operational service through the planned end of service life.

b. As required in the JCIDS Manual, the energy KPP ensures combat capability by balancing the energy performance of systems and the provisioning of energy resources to sustain all required systems/forces by the operational commander in relevant threat environments.

c. Availability KPPs are supported by the sustainment KSAs and metrics outlined in this paragraph:

(1) Reliability (Mission Reliability and Logistics Reliability).

As required by the JCIDS Manual, mission reliability and logistics reliability are the design metrics that have the most significant impact on the program's operational availability and O&S cost.

(2) Maintainability (Corrective Maintenance and Maintenance Burden).

As required by the JCIDS Manual, corrective maintenance, and the required maintenance burden, impact design and the program's operational availability and O&S cost.

(3) Energy.

Energy performance is a key component of system and unit performance and relates to the required energy consumption needed to perform functions or tasks in operational modes, mission profiles and durations, and environmental conditions. Demands for fuel and electric power in capability solutions will be optimized, because they directly affect the demand on the force to provide and protect critical energy supplies. System fuel and electric power demands, and operation when not connected to main utilities or when not receiving supply supporting the extended periods that are consistent with support for strategic analysis products, will be included.

(4) O&S Cost.

DoD Components will ensure reliability and maintainability data from operational and developmental testing and evaluation, fielding, all levels of repair and their associated manpower, and real property informs estimates of O&S costs for major weapon systems.

(5) 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 support package and PS arrangements.

(6) Other Metrics.

Outcome metrics to support sustainment elements included in capability requirements documentation or required by the DoD Component to manage the system development, support package, and supply chain to develop and maintain the system. Additional metrics that measure the cost of achieved availability, which correlates funds spent on sustainment and the resulting, measured, operational and materiel availabilities of the system, aid in assessing the efficiency and effectiveness of a program's current PS arrangement.

3D.5. PS ASSESSMENTS AND REVIEWS.

The PM and PSM will continually assess the PS and logistics approach that support DoD Component-level program support assessments and technical reviews (e.g., systems engineering and test) to ensure the system design and PS performance are integrated to achieve the sustainment metrics and inform applicable modeling and simulation tools. Assessments and reviews assist PMs, PSMs, system operators and maintainers, resource sponsors, and materiel enterprise stake holders to take corrective action to prevent degraded materiel readiness or O&S cost growth on a recurring basis no less than every 5 years. The assessments and reviews outlined in this section are required, and their results will inform the PSS and analyses as appropriate.

a. Independent Logistics Assessments (ILAs).

(1) Pursuant to Section 2337a of Title 10, U.S.C., DoD Components will conduct ILAs for each major weapon system prior to key acquisition decision points, including Milestones B and C and the FRP decision, to assess the adequacy of the support package, and to identify sustainment cost elements, factors, risks, and gaps that are likely to drive future O&S costs, changes to system design that could reduce costs, and effective strategies for managing such costs.

(2) The ILA will focus on PS and sustainment planning, and the execution of that planning to include core logistics analyses and establishment of organic capabilities. Each DoD Component will establish its criteria for independence of the agency or program office conducting the ILA, and will provide:

- (a) Guidance to ensure consistency within the respective DoD Component.

(b) The scope of the assessment for key acquisition decision points. At a minimum, these reviews will be chartered by the CAE and conducted by logistics, program management, and business experts from outside the program office.

(3) ILA reports will include analysis of the weapon system-level PS performance in satisfying warfighter needs, meeting sustainment metrics, and providing best-value outcomes. They must specifically assess O&S costs to identify and address factors resulting in growth in O&S costs and adapt strategies to reduce such costs. DoD Components will continue to conduct and report ILA results to the Assistant Secretary of Defense for Sustainment via the OSD Acquisition Information Repository upon completion of the ILA report or sustainment review (SR) report.

b. SRs.

(1) Pursuant to Section 2441 of Title 10, U.S.C., DoD Component Secretaries will conduct an SR of each major weapon system to include MDAPs no later than 5 years after IOC to assess the PS performance and O&S costs of the weapon system. For each review after the first one, the Secretary concerned will use availability and reliability thresholds and cost estimates as the basis for the circumstances that prompt such a review. The MDA will document results in a memorandum with supporting documentation for each SR made available to the USD(A&S) within 30 days after SR completion via the Acquisition Information Repository. Pursuant to Section 2441(c) of Title 10, U.S.C., the SR will be conducted in coordination with the requirements of Sections 2337 and 2337a of Title 10, U.S.C.

(2) In addition to the required elements detailed in Section 2441 of Title 10, U.S.C., it is recommended that DoD Components consider the following:

(a) Pursuant to Section 2337a of Title 10, U.S.C., DoD Component resource managers provide capability portfolio management-based O&S cost affordability analysis, results, and recommend strategies to mitigate any intractable resource issues. Capability portfolio management O&S cost affordability analysis could include an updated DoD Component stacked area chart (i.e., a “sand chart”) for the operations and management appropriation with underlying spreadsheets.

(b) Results of the most recent ILA with a mitigation plan and plan of action and milestones.

(c) Comparison of current to previous SR data to include the analysis of government and contractor performance of sustainment design metrics compared to those needed for successful operational and mission performance such as readiness and O&S cost metrics, and analysis of energy resilience metrics as defined by the energy KPP.

(d) Identification of requirements/performance thresholds and critical parts affected by threat projections, and DMSMS or Obsolescence for follow-on reviews.

(e) Status and currency of industrial base requirements in support of materiel readiness.

GLOSSARY

G.1. ACRONYMS.

ACRONYM	MEANING
ACAT	acquisition category
ADM	acquisition decision memorandum
AIS	automated information systems
AoA	analysis of alternatives
APB	acquisition program baseline
ATE	automatic test equipment
BCA	business case analysis
CAE	component acquisition executive
CDD	capability development document
CPC	corrosion prevention and control
CSB	Configuration Steering Board
CSDR	cost and software data reporting
DAE	Defense Acquisition Executive
DAG	Defense Acquisition Guidebook
DCAPE	Director of Cost Assessment and Program Evaluation
DFARS	Defense Federal Acquisition Regulation Supplement
DLA	Defense Logistics Agency
DMSMS	diminishing manufacturing sources and material shortages
DoDD	DoD directive
DoDI	DoD instruction
DOT&E	Director of Operational Test and Evaluation
EMD	engineering and manufacturing development
ESOH	environment, safety, and occupational health
EVMS	earned value management system
FD	full-deployment
FOCI	foreign ownership, control or influence
FRP	full-rate production
FY	fiscal year
FYDP	Future Years Defense Program
GEM	goal establishment meeting
ICD	initial capabilities document
ICE	independent cost estimate
ICP	international cooperative program

ACRONYM	MEANING
ILA	independent logistics assessment
IOC	initial operational capability
IP	intellectual property
ITRA	independent technical risk assessment
JCIDS	Joint Capabilities Integration and Development System
KPP	key performance parameter
KSA	key system attribute
LRIP	low-rate initial production
MDA	milestone decision authority
MDAP	major defense acquisition program
MDD	materiel development decision
MOSA	modular open systems approach
MSA	materiel solution analysis
O&S	operations and support
P&D	production and deployment
PL	Public Law
PEO	program executive officer
PM	program manager
PS	product support
PSM	product support manager
RAM	reliability, availability, and maintainability
RFP	request for proposal
RSSP	replaced system sustainment plan
SAE	service acquisition executive
SCRM	supply chain risk management
SecDef	Secretary of Defense
SR	sustainment review
TMRR	technology maturation and risk reduction
U.S.C.	United States Code
USD(A&S)	Under Secretary of Defense for Acquisition and Sustainment

G.2. DEFINITIONS.

A complete glossary of acquisition terms is maintained on the Defense Acquisition University website. The Defense Acquisition University Glossary can be found at <https://www.dau.edu/tools/t/DAU-Glossary>.

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⁴ http://everyspec.com/DATA-ITEM-DESC-DIDs/DI-IPSC/DI-IPSC-81427B_55763/

⁵ http://everyspec.com/DATA-ITEM-DESC-DIDs/DI-IPSC/DI-IPSC-81429A_3757/