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*OF THE AIR FORCE*

*DEPARTMENT OF THE AIR FORCE*
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*Logistics/Acquisition*

# *INTEGRATED LIFE CYCLE MANAGEMENT*

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This publication implements Air Force Policy Directive (AFPD) 63-1/20-1, *Integrated Life Cycle Management*. This instruction establishes the Integrated Life Cycle Management guidelines and procedures for Department of Air Force (DAF) personnel who develop, review, approve or manage systems, subsystems, end-items, services, and activities (for the purpose of this publication referred to as programs throughout this document) procured under Department of Defense (DoD) 5000 series instructions comprising the Defense Acquisition System. Additionally, this DAF Instruction (DAFI) supports guidance provided in the Office of Management and Budget Circular A-11, *Preparation, Submission, and Execution of the Budget*; Department of Defense Instruction (DoDI) 2000.25, *DoD Procedures for Reviewing and Monitoring Transactions Filed with the Committee on Foreign Investment in the United States (CFIUS)*; DoDI 2040.03, *End Use Certificates (EUC)*; DoDI 3020.41, *Operational Contract Support (OCS)*; DoDI 3200.19, *Non-Lethal Weapons (NLW) Human Effects Characterization*; DoDI 3200.20, *Scientific and Engineering Integrity*; DoDI 4140.73, *Asset Physical Accountability Policy*; DoDI 4151.19, *Serialized Item Management for Life Cycle Management of Materiel*; DoDI 4151.20, *Depot Maintenance Core Capabilities Determination Process*; DoDI 4151.21, *Public-Private Partnerships for Product Support*; DoDI 4151.22, *Condition Based Maintenance Plus for Materiel Maintenance*; DoDI 4245.14, *DoD Value Engineering (VE) Program*; DoDI 4245.15, *Diminishing Manufacturing Sources and Material Shortages Management*; DoDI 5000.02, *Operation of the Adaptive Acquisition Framework*; DoDI 5000.60, *Defense Industrial Base Assessments*; DoDI 5000.67, *Prevention and Mitigation of Corrosion on DOD Military Equipment and Infrastructure*; DoDI 5000.69, *DoD Joint Services Weapon and Laser System Safety Review Process*; DoDI 5000.82, *Acquisition of Information Technology (IT);* DoDI 5000.86, *Acquisition Intelligence*;

DoDI 5000.87, *Operation of the Software Acquisition Pathway;* DoDI 5000.88, *Engineering of Defense Systems;* DoDI 5000.89, *Test and Evaluation*; DoDI 5000.91, *Product Support Management for the Adaptive Acquisition Framework*; DoDI 5000.92, *Innovation and Technology to Sustain Materiel Readiness;* DoDI 8320.03, *Unique Identification (UID) Standards for Supporting DoD Information Enterprise*; DoDI 8320.04, *Item Unique Identification (IUID) Standards for Tangible Personal Property*; and DoDI 8320.06, *Organization Unique Identification (OUID) Standards for Unique Identification of External Department of Defense Business Partners.* This publication is applicable to the entire DAF, including all uniformed members of the Regular Air Force, United States Space Force, Air Force Reserve and Air National Guard, except where otherwise noted, all DAF civilian employees, and those with a contractual obligation to abide by the terms of this publication. Soley when used within this instruction, the term "MAJCOM" includes and should be interpreted to include FLDCOMs, direct reporting units (DRU), and field operating agencies (FOA). The term "Wing" should be interpreted to include "Delta," as appropriate. Tier waiver authority is addressed in **Chapter 1**, **paragraph 1.4**. This DAFI may be supplemented at any level, but all supplements must be routed to the Deputy Assistant Secretary (Acquisition Integration) (SAF/AQX) for review and approval prior to publication. Compliance with the attachments in this publication is mandatory. Refer recommended changes and questions about this publication to SAF/AQXS using DAF Form 847, *Recommendation for Change of Publication*; route DAF Forms 847 from the field through the appropriate functional chain of command. Ensure all records generated as a result of processes prescribed in this publication adhere to Air Force Instruction 33-322, *Records Management and Information Governance Program*, and are disposed in accordance with the Air Force Records Disposition Schedule, which is located in the Air Force Records Information Management System. The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the DAF.

## *SUMMARY OF CHANGES*

This document was revised to remove acquisition pathway specific guidance contained in new DAF supplements. Additional changes include the implementation of new DoD issuances, addressing organizational changes including those resulting in the creation of the United States Space Force (USSF), changes to roles and responsibilities, and changes to reflect two DAF Service Acquisition Executives.

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# Chapter 1

# INTEGRATED LIFE CYCLE MANAGEMENT

**1.1. Overview.** DAFI 63-101/20-101, *Integrated Life Cycle Management*, contains directive overarching processes and procedures required to deliver and sustain warfighting capabilities. Integrated Life Cycle Management governs all aspects of infrastructure, resource management, and business systems necessary for the successful acquisition of systems, subsystems, end items, and services to satisfy validated warfighter or user requirements. This publication was written to be used with pathway-specific directive guidance provided in DoD and DAF issuances, and non-directive best practices and procedures provided in DAF Pamphlet (DAFPAM) 63-128, *Integrated Life Cycle Management*, and AFPAM 63-129, *Air System Development and Sustainment Engineering Processes and Procedures*.

**1.2. Applicability.** This instruction applies to the management of space and non-space acquisition programs to include weapons, weapons systems, national security systems, business systems, and all investment-funded activities (for the purpose of this publication referred to as programs throughout this document), in any phase of the life cycle. This instruction applies to acquisition programs using pathways in the adaptive acquisition framework (AAF) as defined in DoDI 5000.02 and shown in **Figure 1.1** below. DAF acquisition programs begin by utilizing investment funding (i.e., research, development, test, and evaluation (RDT&E) or procurement) to satisfy a validated need.

1.2.1. Modifications. Modifications to systems are addressed in **Chapter 9**. Permanent modifications to an operational capability may result in a new acquisition program and appropriate pathway-specific guidance would also apply (e.g., DoDI 5000.85_DAFI 63-151, *Major Capability Acquisition*). Modifications using investment funding are included on the Acquisition Master List (AML) regardless of pathway.

1.2.2. Maintenance. Maintenance activities for existing programs that are not considered a permanent modification and do not utilize investment funding are not required to be managed as a new acquisition program. Maintenance activities are managed in accordance with maintenance and program specific processes. This instruction does not apply to the following modification and maintenance activities:

1.2.2.1. Replacement of interchangeable items which do not involve the alteration of an existing asset. Military Handbook (MIL-HDBK)-61B, *Configuration Management Guidance*, considers an interchangeable product one which possesses such functional and physical attributes as to be equivalent in performance to another product of similar or identical purposes and is capable of being exchanged with the other product without alteration of the products themselves or of adjoining products.

1.2.2.2. Operations and Maintenance (O&M) funded actions that keep a previously established level of performance through routine, recurring work correction of product quality deficiencies, restoration of the functional baseline or performance specification, and do not extend service life of the equipment or alter form, fit, function, or interface. **Note**: Individual engineering changes completed as part of an existing acquisition program involving developmental items or production articles that have not been formally accepted by the government via a Department of Defense (DD) Form 250, *Material Inspection and Receiving Report* are not considered operations and maintenance funded actions.

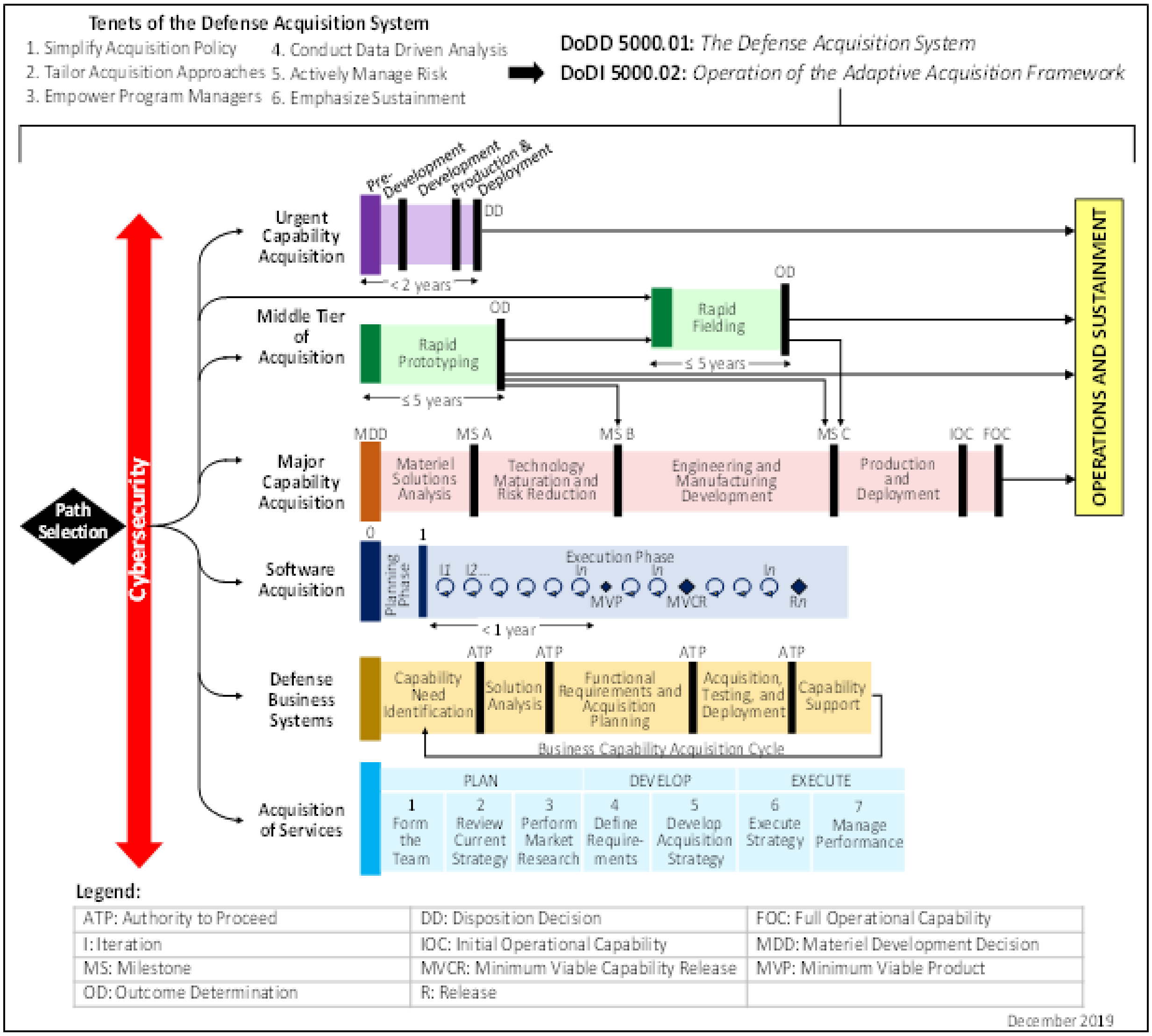
1.2.2.2.1. This includes depot-level maintenance and repair as defined in Title 10 United States Code (USC) Section 2460, *Definition of Depot-Level Maintenance and Repair*, and maintenance actions such as the materiel repair, overhaul, rebuilding of parts, assemblies, subassemblies, and the testing and reclamation of equipment to correct a deficient condition in the originally designed functionality.

1.2.2.2.2. Tech refresh to maintain and/or optimize operational readiness of commercially available office information systems and associated software.

1.2.2.2.3. Assets that are no longer part of an active inventory, such as aircraft in long-term storage that are not part of a reutilization effort.

1.2.2.2.4. Modifications of facilities or other base-level infrastructure, telecommunications equipment, or property.

**Figure 1.1. Adaptive Acquisition Framework.**


Tenets of the Defense Acquisition System
1. Simplify Acquisition Policy
2. Tailor Acquisition Approaches
3. Empower Program Managers
4. Conduct Data Driven Analysis
5. Actively Manage Risk
6. Emphasize Sustainment
DoDD 5000.01: The Defense Acquisition System
DoDI 5000.02: Operation of the Adaptive Acquisition Framework
Path Selection
Cybersecurity
Urgent Capability Acquisition
Pre-Development
Development
Production & Deployment
DD
< 2 years
Middle Tier of Acquisition
Rapid Prototyping
OD
≤ 5 years
Rapid Fielding
OD
≤ 5 years
Major Capability Acquisition
MDD
MS A
MS B
MS C
IOC
FOC
Materiel Solutions Analysis
Technology Maturation and Risk Reduction
Engineering and Manufacturing Development
Production and Deployment
Software Acquisition
0
1
Planning Phase
Execution Phase
I1
I2...
In
MVP
MVCR
Rn
< 1 year
Defense Business Systems
ATP
Capability Need Identification
Solution Analysis
Functional Requirements and Acquisition Planning
Acquisition, Testing, and Deployment
Capability Support
Business Capability Acquisition Cycle
Acquisition of Services
PLAN
DEVELOP
EXECUTE
1 Form the Team
2 Review Current Strategy
3 Perform Market Research
4 Define Requirements
5 Develop Acquisition Strategy
6 Execute Strategy
7 Manage Performance
OPERATIONS AND SUSTAINMENT
Legend:
ATP: Authority to Proceed
DD: Disposition Decision
FOC: Full Operational Capability
I: Iteration
IOC: Initial Operational Capability
MDD: Materiel Development Decision
MS: Milestone
MVCR: Minimum Viable Capability Release
MVP: Minimum Viable Product
OD: Outcome Determination
R: Release
December 2019

1.2.3. Major Capability (Acquisition Category (ACAT)) Programs. Additional detailed guidance for ACAT programs, also known as Major Capability Acquisition (MCA) programs, is in DoDI 5000.85_DAFI 63-151, *Major Capability Acquisition*. DoDI 5000.85_DAFI 63-151 defines and provides the criteria for ACAT programs. Programs retain their ACAT designation through sustainment, until demilitarized, disposed of, or terminated. MCA programs are categorized on the AML and the Investment Master List (IML) depending on phase and funding type.

1.2.4. Defense Business Systems (DBS). Additional detailed guidance for DBS is in DoDI 5000.75_DAFI 63-144, *Business System Requirements Acquisition*. DBS programs are subject to AML categorization and acquisition reporting.

1.2.5. The Middle Tier of Acquisition (Rapid Prototyping and Rapid Fielding). Additional detailed guidance for Middle Tier of Acquisition programs is in DoDI 5000.80_DAFI 63-146, *Operation of the Middle Tier of Acquisition (MTA)*. MTA programs are subject to AML categorization and acquisition reporting.

1.2.6. Software Acquisition. Additional detailed guidance for software acquisition pathway programs is in DoDI 5000.87_DAFI 63-150, *Operation of the Software Acquisition Pathway*. Software programs are subject to AML categorization and acquisition reporting. **Note**: Not all software or software-intensive programs must use the Software Acquisition Pathway. Program managers (PM) may choose the pathway from the AAF given their program's objectives and resources.

1.2.7. Urgent Capability Acquisition (UCA). Additional detailed guidance for UCA is in DoDI 5000.81_DAFI 63-147, *Urgent Capability Acquisition.* UCA includes rapid acquisition programs responding to an approved Joint Urgent Operational Need (JUON), Joint Emergent Operational Need (JEON), or Urgent Operational Need (UON). Urgent capability programs are subject to AML categorization and acquisition reporting.

1.2.8. Acquisition of Services. Acquisition of services are AML-exempt investment activities and follow the guidance in DoDI 5000.74, *Defense Acquisition of Services* and AFI 63-138, *Acquisition of Services*.

1.2.9. Sustainment Activities. This publication provides guidance for programs in the Operations and Support Phase including programs or systems utilizing O&M funding. Systems in the Operations and Support Phase are not required to retroactively meet information requirements identified in previous phases of the acquisition life cycle. These systems should continue to meet the requirements needed for continued operation to include modifications and maintenance activities. Sustainment activities utilizing investment funding should be categorized as either an AML or AML-Exempt program and report funding in accordance with this DAFI (see **Chapter 11**).

1.2.10. Other Acquisition Master List-Exempt Investment Activities. All investment activities are required to report investment funding and be categorized as AML-Exempt per **Chapter 11**. Investment activities are required to comply with Federal Acquisition Regulation (FAR) and financial management requirements as defined. AML-Exempt investment activities, except services, are not considered acquisition pathway programs and are not required to follow DoDD 5000.01, *The Defense Acquisition System,* guidance related to the management of acquisition programs. AML-Exempt investment activities include, but are not limited to:

1.2.10.1. Civilian Pay (Investment-Funded), Commodity Procurements, Developmental Infrastructure Sustainment, Development of Enterprise Architectures/Certifications, and Replenishment Spares Procurements.

1.2.10.2. Studies. Studies using investment funds or in support of a program.

1.2.10.3. Technology Projects. **Note**: The management procedures of this DAFI do not apply to science and technology programs, demonstrations, experiments, or projects managed using AFI 61-101, *Management of Science and Technology*.

1.2.11. Special Access Program (SAP). The PM collaborates with SAF/AAZ when SAP information is involved to determine a prudent program protection planning approach prior to developing a program protection plan (PPP), reference DoDI 5000.83_DAFI 63-113, *Technology and Program Protection to Maintain Technological Advantage* for additional guidance. SAPs are managed in accordance with DoDD 5205.07, *Special Access Program (SAP) Policy*, DoDI 5205.11, *Management, Administration, and Oversight of DoD Special Access Programs (SAPs),* AFPD 16-7, *Special Access Programs* and AFI 16-701, *Management, Administration and Oversight of Special Access Programs*.

1.2.11.1. Collateral programs with acknowledged SAP elements are required to follow the guidance in this DAFI unless specifically exempt by this or other publications.

1.2.11.2. For all other SAP programs, the Assistant Secretary of the Air Force for Acquisition, Directorate of Special Programs (SAF/AQL), in consultation with the Assistant Secretary for the Air Force for Space Acquisition and Integration, Integration Directorate (SAF/SQX) if space related, will assess all acquisition policy and instructions for application to SAPs and establish acquisition policy specific to SAPs in accordance with AFI 16-701. SAF/AQL, SAF/AQX, and SAF/SQX in coordination with the Director, Security, Special Programs Oversight and Information Protection (SAF/AAZ), are responsible for these activities.

1.2.11.3. SAF/AAZ reviews Committee on Foreign Investment in the United States transactions received from DoD Special Access Program Central Office and is the DAF responsible party as the Cognizant Security Authority pursuant to DoDI 5205.11.

1.2.12. Security Cooperation and Foreign Military Sales (FMS). Security Cooperation and FMS programs support United States (U.S.) foreign policy and national security objectives by enabling the United States to build, sustain, expand, and guide international partnerships that are critical enablers for its national security objectives.

1.2.12.1. Security Cooperation and FMS acquisition programs are executed in accordance with the *Arms Export Control Act*, 22 USC Section 2751; Defense Security Cooperation Agency 5105.38-M, *Security Assistance Management Manual*; DoD Financial Management Regulation 7000.14-R, *Department of Defense Financial Management Regulation*; and AFMAN 16-101, *Security Cooperation (SC) and Security Assistance (SA) Management*.

1.2.12.2. FMS programs are implemented based on the direction in the DoD 5000 acquisition series, DoD 5200 series, DAF 99-series test publications, DAF 62-series engineering publications, DAF 63-series acquisition publications, DAF 14-series intelligence publications, and DAF 16-series operations support publications to afford the foreign purchaser the same benefits and protections that apply to DoD procurement. The applicability to each FMS case of tailored requirements or application of unique requirements from these policies is limited to what is contained in the government-to-government agreement.

1.2.12.3. FMS program requirements are contained in a government-to-government agreement. This agreement is implemented for execution through the appropriate accountability reporting chain of the assigned DoD component authority.

1.2.12.3.1. The government-to-government agreement established by a bilaterally signed Letter of Offer and Acceptance specifies any tailored implementation of acquisition direction for the FMS program.

1.2.12.3.2. Collaboration with the user occurs as early as possible in the program's life cycle on the feasibility of exportable and interoperable configurations and open system architectures in the system design based on an analysis of current and future international market. This can enable more timely and efficient future FMS cases; however, changes adding requirements or costs must be approved by the user.

1.2.12.3.3. FMS programs are not included on the IML; however, the PM for FMS programs uses the Project Management Resource Tool (PMRT) Management Acquisition Report (MAR) to capture specified programmatic, contracting, and financial data. Reference AFMAN 16-101 for guidance.

**1.3. Acquisition Execution Chain of Authority.** The DAF acquisition chain of authority reflects the management structure from the Service Acquisition Executive (SAE) through the Program Executive Officer (PEO) to the accountable PM. **Note**: The SAE is referred to as the Component Acquisition Executive (CAE) in DoD issuances. The acquisition chain of authority should be streamlined and characterized by short, clearly defined lines of responsibility, authority, and accountability and minimize levels of review between the PM and the decision authority. Only those in the acquisition execution chain of authority exercise decision-making authority on programmatic matters. The PM documents the acquisition execution chain of authority in the Acquisition Strategy. The acquisition chain of authority includes the following:

1.3.1. Milestone Decision Authority (MDA) or Decision Authority (DA). The MDA, also referred to as DA for pathways without milestones, has the authority to approve entry of a program into the next phase of the life cycle process, certify milestone or other decision point criteria, and is accountable for cost, schedule, and performance reporting to higher authority, including Congress. The authority of the MDA and delegation is defined in **Table 1.1**. For acquisition of services, decision authority delegations are in AFI 63-138. **Note**: References to MDA in this publication apply to the person with program decision authority and overall responsibility for a program regardless of pathway.

1.3.1.1. The Defense Acquisition Executive (DAE) is the MDA for ACAT ID programs in accordance with the guidelines specified in DoDI 5000.85.

1.3.1.2. The SAE is the MDA for ACAT IB, ACAT IC, Business Category (BCAT) I, and special interest programs. The SAE is the MDA for Middle Tier and software pathway programs meeting the criteria of a Major Defense Acquisition Program (MDAP) unless delegated. Reference DoDI 5000.85_DAFI 63-151 for MDAP criteria.

1.3.1.2.1. MDA responsibilities for ACAT II, ACAT III, BCAT II, BCAT III, Middle Tier, and Software Pathway programs, are delegated to a PEO by this instruction and documented in the PEO assignment memorandum.

1.3.1.2.2. PEOs may delegate ACAT II, ACAT III, BCAT II, BCAT III, Middle Tier, or Software Pathway programs MDA authorities to any individual and should delegate to the lowest level. The SAE has the authority to rescind delegations. Delegations are in writing (can be waived by SAE) and no further delegation is allowed.

1.3.1.2.3. PEOs will notify the SAE and SAF/AQX or SAF/SQX (for space programs), of all MDA delegations and update applicable reporting systems (can be waived by SAE).

**Table 1.1. MDA Delegation.**

| **CATEGORIZATION**[1] | **Designation Authority** | **MDA** |
|---|---|---|
| ACAT ID | DAE | DAE |
| ACAT IB[2] | SAE | SAE |
| ACAT IC | DAE | SAE |
| Middle Tier meeting MDAP criteria | SAE[3] | SAE |
| Software Pathway meeting MDAP criteria | SAE[4] | SAE[4] or as delegated |
| ACAT II[5] | SAE | PEO or as delegated to any individual |
| ACAT III[5] | SAE | PEO or as delegated to any individual |
| BCAT I | SAE | SAE |
| BCAT II | SAE | PEO or as delegated to any individual |
| BCAT III | SAE | PEO or as delegated to any individual |
| MTA or software not meeting MDAP criteria | SAE | PEO or as delegated to any individual |

**Notes**: 1) Refer to pathway publications for category descriptions.
2) SAE designated the MDA for all MDAP programs entering Milestone A after October 1, 2016, unless the Secretary of Defense designates an alternate MDA (reference Section 825 of Public Law 114–92 and **paragraph 3.9**).
3) Use of MTA for MDAP level requires pre-approval from DAE. (Reference DoDI 5000.80)
4) Unless designated Special Interest by the DAE.
5) Includes ACAT programs in the MCA and UCA pathways.

1.3.2. Program Executive Officer. The PEO is responsible for and has authority to accomplish assigned portfolio objectives and ensures collaboration across the integrated life cycle management framework. The PEO identifies a Director of Engineering to be accountable to the PEO for oversight of the portfolio’s engineering functional support. **(T-2)**

1.3.2.1. The PEO provides dedicated executive program management of delegated programs. **(T-1)**

1.3.2.2. All personnel assigned as a PEO meet the Key Leadership Position qualifications and tenure requirements identified in this instruction and AFI 36-1301, *Management of Acquisition Key Leadership Positions*. **(T-0)**

1.3.3. Program Manager (PM). The PM is the designated individual with the responsibility for and authority to accomplish program objectives for development, production, and sustainment to meet the user's operational needs throughout life cycle of the program.

1.3.3.1. All programs on the AML, to include programs using MCA Pathway (i.e., ACATs), MTA Pathway, UCA Pathway, DBS Pathway (BCATs), or Software Acquisition (SWA) Pathway, and weapons systems identified by DAFPD 10-9, *Lead Command/Lead Agent Designation and Responsibilities for United States Air Force Weapons Systems, Non-Weapon Systems, and Activities*, will have only one clearly identified and documented PM. (**T-0)** A waiver is required to be submitted to the SAE if no single PM is identified.

1.3.4. Program Support Personnel. The PM leads the program organization in executing the mission. Functional representatives within the program, irrespective of location or whether supporting the program on a full or part time basis, take program direction from the PM for program-related activities. The PM identifies and defines the roles and responsibilities of support functions critical to the successful execution of the PM's responsibilities. As a minimum, the PM identifies and defines the Chief Engineer, the Product Support Manager (PSM), the Chief Developmental Tester (Test Manager), and the Acquisition Intelligence Analyst. The PM also identifies the Procuring Contracting Officer (PCO). Roles and responsibility descriptions include specific delegations and limitations of delegations, establish clear lines of accountability, and identify requirements for cross-functional management and coordination. The PM keeps these descriptions current throughout the life cycle. **(T-3)** Other functional positions should be identified; full descriptions are included at the PM's discretion.

1.3.4.1. Chief Engineer. The Chief Engineer is identified as soon as possible following the assignment of the PM. **Note**: The DAF term "Chief Engineer" is synonymous with the DoDI 5000.88 term "Lead Systems Engineer."

1.3.4.2. Product Support Manager. The PEO ensures a PSM is assigned to all ACAT I and II programs, MTA programs, and weapon systems identified by DAFPD 10-9. **(T-0)** For ACAT I and II programs in the operation and sustainment phase, all ACAT III, and MTA programs, the PM and PSM may be dual-hatted if approved by the implementing command and the PEO. For Joint MDAPs where the PSM is not a DAF position, a DAF Service PSM position is established to support the MDAP PSM. The Service PSM reports directly to the DAF organization assigned responsibility for supporting the Joint Program Office. The PSM is assigned concurrently with the PM. **(T-1)**

1.3.4.3. Chief Developmental Tester (or Test Manager). All MDAPs require a Chief Developmental Tester, which is designated as a Key Leadership Position in accordance with AFI 36-1301. A Test Manager is identified for all other ACAT programs. While the Test Manager does not need to meet the more stringent workforce qualifications of the Chief Developmental Tester, the Test Manager must be able to perform the Chief Developmental Tester or Test Manager responsibilities as detailed in DoDI 5000.89_DAFI 99-103, *Capabilities-Based Test and Evaluation*. **(T-1)**

1.3.4.4. Acquisition Intelligence Analyst. Acquisition Intelligence Analysts are program level intelligence representatives. The Acquisition Intelligence Analyst provides advice and counsel on intelligence, surveillance, and reconnaissance (ISR) matters and assists the program in being fully threat informed with authoritative intelligence. The Acquisition Intelligence Analyst ensures that intelligence information is tailored for the program and follows guidance described in DoDI 5000.86 as well as published Intelligence Community (National, Agency and DAF) Directives and Instructions. **(T-0)**

1.3.4.5. Procuring Contracting Officer. The PCO is warranted by their respective agencies to issue legal contracts between the U.S. Government and the contractor entity. All programmatic, technical, and other contractual requirements established by the PM for the contractor (or proposed contractor) must be issued by the PCO.

1.3.4.6. Other Program Support. Other program support consists of resources performing program execution activities. This includes, but is not limited to, financial management, cost analysis, administrative contracting officer, legal, program integration, cybersecurity (including the Authorization Official), Environment, Safety and Occupational Health (ESOH), mission assurance, small business, program protection, security, meteorological analysis, other engineering specialties, and other logistics support.

1.3.5. Staff Organizations. Councils, committees, advisory groups, panels and staffs at all levels provide advice and recommendations to the PM, PEO, MDA, SAE, and DAE who are accountable for the overall program results. The PM is responsible for and has the authority to execute a program. Staff organizations support the PM by providing trained personnel and advice to the PM to maximize the opportunity to successfully execute the program. Staff organizations provide objective inputs, such as legal or engineering, to the program decision process. Staff organizations cannot exercise or imply decision-making authority on programmatic matters unless explicitly delegated.

**1.4. Waiver Authority (Tiering) and Tailoring.** Tailoring is the ability to integrate, consolidate, incorporate, and streamline documentation to meet the intent of the requirement in the most efficient and effective manner possible. Waiving a requirement (e.g., statute, policy, document, etc.) is different than tailoring. Waiving a document is stating that the document does not apply, and the intent will not be fulfilled.

1.4.1. Waivers. A waiver is a statement to relinquish or provide exceptions to a specific requirement.

1.4.1.1. The authorities to waive Wing or unit level requirements that are outside of the acquisition execution chain in this publication are identified with a tier ("T-0, T-1, T-2, T-3") number following the compliance statement. See DAF Manual (DAFMAN) 90-161, *Publishing Processes and Procedures*, for a description of the authorities associated with the tier numbers. Submit requests for waivers for tiered requirements through the chain of command to the appropriate tier waiver approval authority, or alternately, to the requestor's commander for non-tiered, non-acquisition execution compliance items.

1.4.1.2. Mandates to the acquisition execution chain defined in this DAFI, including mandates to the PEO, MDA or other DA, PM, or other program office members, are not elevated through the organizational chain of authority; therefore, tiering in accordance with DAFI 90-160, is not applied and the waiver authority is as specified or if not specified, to the requestor's DA.

1.4.1.3. Approval authority for this DAFI is the Assistant Secretary of the Air Force (Acquisition, Technology, and Logistics) (SAF/AQ). Signature authority for waivers to this DAFI is delegated to SAF/AQX; SAF/AQX will coordinate with SAF/SQX for waivers impacting USSF or space programs. If there is a clear conflict between an approved course of action and a DAF publication requirement, submit a DAF Form 679, *Department of the Air Force Publication Compliance Item Waiver Request/Approval*, to the publication office of primary responsibility (OPR) to obtain a waiver to requirements or initiate changes to resolve the conflict. Conflicts are resolved by the appropriate Headquarters Air Force (HAF) functional.

1.4.1.4. If there is a clear conflict between an approved course of action and a DoD level issuance that cannot be addressed through tailoring, SAF/AQ will request waivers from the appropriate DoD office regardless of the program's categorization. USSF organizations will route proposed waivers through SAF/SQX who will facilitate coordination with SAF/AQ. If a waiver is required, the waiver request should be submitted to the OPR of the DAF publication implementing the DoD issuance for appropriate staffing and approval. If the waiver requests cannot be resolved between SAF/AQX and SAF/SQX adjudication processes, the requests will be resolved by SAF/AQ and SAF/SQ.

1.4.1.5. Waivers for SAPs are submitted through the relevant Major Commands and Field Commands (MAJCOM/FLDCOM) SAP management office, as designated in accordance with AFPD 16-7for submission to SAF/AAZ for adjudication.

1.4.2. Tailoring. Tailoring recognizes that acquisition programs are not all the same. Policy permits customized reviews, processes, and decision support information to accommodate the unique characteristics of a program while still meeting the statutory and regulatory needs for decision making and oversight. Tailoring ensures a program or project can balance all types of risks, including technical, programmatic, or strategic risks in providing the needed capability to the warfighter or user in the shortest time while ensuring affordability, supportability, system safety and performance. Tailoring for programs is requested by the PM and approved by the MDA or DA. This is done to make better decisions by using a systematic risk-informed decision approach based on sufficient, relevant, and timely information. **Note**: Reference DoDI 5000.02 and DAFPAM 63-128, *Integrated Life Cycle Management,* for more information on tailoring.

1.4.2.1. Tailoring is documented, including the supporting rationale and citation to the applicable statute or regulation. The PM identifies the tailoring strategy in the Acquisition Strategy or Acquisition Decision Memorandum (ADM) (documenting the tailoring strategy can be waived by the DA). The DA approves the tailoring strategy as part of the documentation approval.

1.4.2.2. Tailoring may be limited by statute or other guidance and should not result in a requirement being waived, except as specified by statute.

### 1.5. PEO Portfolio Assignment or Transfer.

1.5.1. PEO Portfolio Assignment. During the requirements validation process, the requirements sponsor informs SAF/AQ or the Assistant Secretary for Space Acquisition and Integration (SAF/SQ) of the potential program. Information provided contains proposed program description, estimated dollar value, funding status, warfighter need date, and anticipated categorization level. With input from the implementing command, SAF/AQ or SAF/SQ assigns the effort to a PEO and includes confirmation of proposed categorization level and the MDA. The lead command or sponsor submits a request for PEO assignment once funding is identified and the DAF budget and program requirements have been developed and submitted to the appropriate requirements approval authority.

1.5.1.1. PEO assignment should be initiated for all programs projected to be on the AML prior to conducting an acquisition life cycle decision to include program initiation or contracting decision. Acquisition life cycle decisions can be made once the PEO has received the candidate identification memo. If the PEO decides to proceed, there is no need to wait until the official final memo is received. **Exceptions**: PEO assignment is not required for modifications to current programs which are already assigned to a PEO. UCA programs may have the acquisition authority designated outside the PEO assignment process.

1.5.1.2. For existing systems or systems transitioning from another agency, the sponsor provides the program description, estimated dollar value, and funding status to SAF/AQ or SAF/SQ for assessment. Upon acceptance and with input from the implementing command, SAF/AQ or SAF/SQ assigns the effort to a PEO and determines the MDA.

1.5.1.3. For technology demonstration projects that may transition into acquisition programs or deployed capability, the sponsor may request SAF/AQ or SAF/SQ temporarily assign a PEO to support technology demonstration transition planning. Temporary PEO assignments are revalidated on an annual basis (may be waived by SAF/AQ or SAF/SQ) and may be transitioned to a permanent assignment based on confirmation of a validated requirements document in coordination with the implementing command.

1.5.2. PEO Portfolio Transfer. Coordinate transfer of programs between PEO portfolios through the implementing command(s) for approval by the SAE. The impacted organizations prepare a joint request providing rationale and justification for the proposed transfer **(T-1).** Send PEO Portfolio Assignment requests to SAF/AQ or SAF/SQ.

1.5.3. Basing Actions. Basing actions include the activation, inactivation, or adjustment, that result in the increase, decrease, or movement of DAF and non-DAF units, missions, manpower authorizations, or weapon systems to DAF and non-DAF locations.

1.5.3.1. Depot actions that exceed the scope of Depot Source of Repair (DSOR) processes may be considered basing actions.

1.5.3.2. In general, PEO portfolio assignment and transfer activities will not result in a strategic basing action. However, for actions meeting the following criteria, the implementing command, with support from the PM, will provide a summary of the action to the Assistant Secretary of the Air Force for Installations, Environment and Energy (SAF/IE) for review (may be waived by SAF/IE) and may require processing as a basing action:

1.5.3.2.1. The movement of personnel across MAJCOM/FLDCOMs.

1.5.3.2.2. Facility requirements with construction that require the use of Military Construction (MILCON) funding or government leased space.

1.5.3.2.3. New work bringing 100 or more military or government personnel to a base.

1.5.3.2.4. Action may result in total installation growth greater than 1000 personnel, including military, civilian, and contractor personnel.

1.5.3.2.5. Special interest or congressional actions regardless of size or scope.

1.5.3.2.6. Refer to AFI 10-503, *Strategic Basing*, for guidance on the basing process.

# Chapter 2

## ROLES AND RESPONSIBILITIES

**2.1. Purpose.** This chapter defines roles and responsibilities and is not meant to be all inclusive; additional complementary functional and organizational roles and the details to execute the roles and responsibilities may be found throughout this document and other publications referenced in **Attachment 1**. Responsibilities of headquarters staff are located in mission directives; the responsibilities of SAF/AQ staff are included in HAF Mission Directive (MD) 1-10, *Assistant Secretary of the Air Force (Acquisition)* and the responsibilities of SAF/SQ staff are included in HAFMD 1-17, *Assistant Secretary of the Air Force (Space Acquisition and Integration)*. **Note**: Roles and responsibilities related to acquisition industrial preparedness are explained in **Chapter 12.**

**2.2. Service Acquisition Executive.** SAF/AQ is the SAE for DAF non-space programs. SAF/SQ is the SAE for space programs. The SAE has overall authority for the management of DAF acquisition programs. The SAE will:

2.2.1. Execute SAE responsibilities outlined in DoD guidance for execution of DAF acquisitions. The SAE is responsible for the integrated life cycle management of systems and Service programs from entry into the defense acquisition system to retirement and disposal. This includes research, development, engineering, test, evaluation, production, delivery, and sustainment of new systems, or modifications and support of existing systems.

2.2.2. Ensure programs, to include modifications, are properly defined and justified in budget documentation.

2.2.3. Execute Title 10 USC Section 2464, *Core Logistics Capabilities,* and Title 10 USC Section 2466, *Limitations on the Performance of Depot-Level Maintenance of Materiel*. Ensure implementation across acquisition programs for compliance with Core and organic requirements **(T-0)** Reference AFI 23-101, *Materiel Management Policy,* for additional information.

2.2.4. Assign programs to PEOs.

**2.3. Senior Procurement Executive (SPE).** The DAF Senior Procurement Executive is the Assistant Secretary for the Air Force for Acquisition Technology & Logistics (SAF/AQ). SAF/AQ is designated as the single DAF SPE in accordance with 41 USC Section 1702(c). However, in accordance with 10 USC Section 9016, *Assistant Secretaries of the Air Force,* as amended by FY22 NDAA, SAF/SQ may discharge assigned duties and authorities of a SPE exclusively for execution of space systems and programs as delegated by the Secretary of the Air Force (SECAF).

**2.4. Milestone Decision Authority.** The MDA may also be referred to as the DA. MDA will:

2.4.1. Maintain overall responsibility for a program.

2.4.2. Approve tailoring of program strategies, life cycle phases, and documentation of program information as proposed by the PM. Tailor oversight, documentation, timing and scope of decision reviews and decision levels to fit particular program conditions consistent with applicable laws and regulation.

2.4.3. Be accountable for program cost, schedule, risk, and performance reporting to higher authority, including congressional reporting.

2.4.4. Ensure that when a program enters the acquisition system at a point other than pre-Milestone A or equivalent, all phase-specific criteria relating to a skipped milestone or other decision point are reviewed for applicability and completed as determined appropriate by the MDA. Reference the AAF Documentation Identification (AAFDID) tool (**https://www.dau.edu/aafdid/Pages/about.aspx**), pathway-specific guidance, and DoD acquisition guides (**https://aaf.dau.edu/aaf/policies/**) for milestone criteria and documentation requirements.

2.4.5. Comply with all program milestone certification requirements as prescribed by statute or DoD policy.

2.4.6. Conduct program oversight to assess the adequacy of all life cycle execution strategies, planning, model, documents, and approve the termination of an acquisition program.

**2.5. Program Executive Officer.** The PEO will:

2.5.1. Accomplish assigned portfolio or program objectives for development, production, sustainment, and disposal of the assigned portfolio including assigned ACAT programs and their modifications. The PEO interacts with other PEOs with similar program content or contractor and business segments to identify shared concerns, opportunities for leverage, and to develop an informed position of contractor performance within the portfolio at the department, Service, PEO, and program level. The PEO will work with the lead command and HAF Capability Director to secure necessary funding in time to meet portfolio or program objectives.

2.5.2. Execute oversight of the assigned portfolio of programs, in some cases as the MDA, while continuously assessing and optimizing programs within their portfolio. For programs with significant programmatic issues, the PEO reviews the program for restructure or termination. When necessary to support DAF priorities and missions, the PEO recommends shifts in investments in the portfolio.

2.5.3. Maintain knowledge of prime and major subcontractor efforts within the portfolio and engage periodically with industry counterparts to ensure transparency and unity of effort in portfolio execution.

2.5.4. Notify the implementing command of new missions and changes to include proposed program realignments. The PEO will work with the implementing command to identify need for the government program office to include facilities, personnel, and resources and validate infrastructure investment requirements identified by the PM.

2.5.5. Work closely with the relevant laboratories, implementing commands, and the Technology Executive Officer to maintain cognizance of and leverage pertinent science and technology activities and advancements to develop and execute capability development pipelines within their portfolio.

2.5.6. Ensure programs within their portfolio receive appropriate support to include acquisition intelligence, security, facilities, and other resources in collaboration with the implementing command.

2.5.7. Determine if modifications in their portfolio will be designated as new acquisition programs.

**2.6. Program Manager (PM).** The PM will:

2.6.1. Be accountable for assigned programs through the acquisition execution chain of authority on all matters of program cost, schedule, risk, performance, and asset disposal.

2.6.2. Be responsible for program execution, sponsor, or user support with development of capability requirements, and deliver systems that meet documented user requirements while seeking to minimize costs and improve readiness throughout the life cycle.

2.6.3. Implement Digital Materiel Management in assigned programs, including integrated digital environments, where appropriate, leveraging enterprise DAF Digital tools to deliver improved program outcomes.

2.6.4. Make a national security system (NSS) determination as outlined in **Attachment 4** and for performing annual reviews for changes in determination status.

2.6.5. Ensure compliance with all applicable regulatory and statutory guidance to include developing and maintaining appropriate programmatic documentation and relevant available or required model data.

2.6.6. Develop tailored and executable program strategies, models, and documentation, appropriate for program risk and approved by the MDA.

2.6.7. Propose waivers and deviations as needed to streamline, tailor, and execute the assigned program.

2.6.8. Ensure systems and end items meet the warfighter's sustainment and capability needs based on an accurate Authoritative Source of Truth, which captures the current state and the history of the technical baseline. It serves as the central reference point for models and data across the life cycle. The authoritative source of truth will provide traceability as the system of interest evolves, capturing historical knowledge, and connecting authoritative versions of the models and data, reference AFI 90-7001 for additional guidance.

2.6.9. Design, build, test, and continuously update systems to consider evolving adversary threats and address acquisition security considerations in accordance with **Chapter 6**, acquisition security considerations.

2.6.10. Comply with PM responsibilities outlined in AFI 17-101, *Risk Management Framework (RMF) for Air Force Information Technology (IT)*.

2.6.11. Identify infrastructure and supporting requirements to the appropriate MAJCOM/FLDCOM. Coordinate DAF plant expansion or construction efforts per **Chapter 12** of this DAFI.

2.6.12. Utilize Product Groups, Modular Open Systems Architectures (MOSA) and enterprise management of materiel, including IT infrastructure, to minimize the proliferation of system-unique equipment when appropriate to improve interoperability, decrease costs, or for operational and sustainment considerations. Review available and projected Enterprise IT services for applicability to the system program (to include all components such as the prime item, support equipment, training and simulation equipment, embedded software, and software development environments) and leverage EIT to the maximum possible extent.

2.6.13. Identify requirements and the risk associated with unmet requirements for the government program office to include facilities, personnel, and resources and provide them to the PEO, or designee, to work with the appropriate implementing command.

2.6.14. Coordinate and receive approval from the Air Force Life Cycle Management Center/Cryptologic and Cyber Systems Division (AFLCMC/HNC [contact AF COMSEC CCI Authority workflow: **AFLCMC.HNCLS.CCIWorkflow@us.af.mil**]) prior to any Communications Security/Controlled Cryptographic Item (COMSEC/CCI) development, acquisition, modernization, sustainment, disposal, or action affecting controlled cryptographic item inventory balances. Program offices are not authorized to bypass centralized procurement of controlled cryptographic item without approval of AFLCMC/HNC or the Chief Information Officer (SAF/CN).

2.6.15. Identify and satisfy external certifications, reviews, and approvals applicable to the system.

2.6.16. Ensure all appropriate program protection activities are completed and requirements are met, reference DoDI 5000.83_DAFI 63-113 for additional guidance.

2.6.17. Ensure all appropriate financial audit responsibilities are met, including establishing controls and retaining documentation, to ensure accountability of assets and preparation of accurate financial statements.

**2.7. Product Support Manager.** The PSM takes program direction from the PM and will:

2.7.1. Be accountable for all product support matters regarding program cost, schedule, performance, compliance, and supportability. Additionally, the PSM ensures the program's product support strategy incorporates logistics, mishap, intelligence supportability and ESOH risk data; integrated product support elements and aligns to overarching DAF enterprise priorities.

2.7.2. Be accountable for leading program office integrated product support throughout the system life cycle.

2.7.3. Be accountable for any formal delegation of program management authority and assignment of programmatic responsibilities by the PM.

2.7.4. Continually assess reliability and maintainability of the weapon system and its subcomponents throughout its life cycle.

**2.8. Chief Engineer.** The Chief Engineer takes program direction from the PM and will:

2.8.1. Develop and implement a comprehensive systems engineering strategy addressing the total life cycle of the system and documents the strategy.

2.8.2. Be accountable for leading program office engineering execution throughout the system life cycle in accordance with:

2.8.2.1. **Chapter 5** , Systems Engineering.

2.8.2.2. Engineering program management and programmatic authorities formally delegated or assigned by the PM.

2.8.2.3. Engineering or technical authorities assigned or delegated to the Chief Engineer by specific certification authorities or DAF policy.

2.8.3. Serve as the overall Engineering and Technical Authority for the program office.

2.8.3.1. While Chief Engineers do not make final programmatic decisions, they do make objective engineering and technical decisions that both affect and inform programmatic decisions.

2.8.3.2. Examples of these engineering and technical decisions include, but are not limited to, the following:

2.8.3.2.1. Identify and assess program technical risks and recommend to the PM proposed mitigation measures.

2.8.3.2.2. Assess and approve engineering changes and make implementation recommendations to the PM including but not limited to determining existence of Critical Program Information.

2.8.3.2.3. The Chief Engineer ensures the delivered product design data satisfies Technical Data Package and Model-based Technical Data Package requirements and define the program's Authoritative Source of Truth.

2.8.3.2.4. DAFPAM 63-128, provides more information on engineering and technical authority, both within a program office and in organizations providing external support to program offices.

2.8.3.2.5. AFPAM 63-129, provides information and recommended procedures for implementing engineering development and sustainment processes and procedures for the procurement of air systems.

2.8.3.2.6. DoDI 5000.83_DAFI 63-113 provides guidance on protection planning activities for the integrated management of system security and threat risks by applying system security engineering best practices and processes.

**2.9. Chief Developmental Tester (Test Manager).** The Chief Developmental Tester (or Test Manager for non-MDAPs) takes program direction from the PM and will:

2.9.1. Coordinate the planning, management, and oversight of Developmental Test and Evaluation (DT&E) activities. See DoDI 5000.89_DAFI 99-103 for more detailed information on Chief Developmental Tester or Test Manager requirements and responsibilities.

2.9.2. Maintain oversight of program contractor, government, and other program-related DT&E activities. Coordinate with the Operational Test Organization to establish integrated testing where feasible and practicable.

2.9.3. Advise the PM on all DT&E activities including contractor testing and help PM make technically informed, objective judgements regarding DT&E results.

2.9.4. Co-chair and provide program guidance to the Integrated Test Team, a cross- functional team responsible for developing the program T&E strategy.

**2.10. Acquisition Intelligence Analyst.** Takes direction from the PM and will:

2.10.1. Provide intelligence and ISR subject matter expertise to the acquisition effort. Areas of expertise include but are not limited to: Critical Intelligence Parameter (CIP) identification and associated threat forecasts; tailored threat reporting (e.g., briefing, planning, risk analysis, etc.) to include validated on-line life cycle threat activities; identification of relevant threat models, data, and cross-program ISR dependencies; management of intelligence production requirements (PRs) and intelligence collection requirements (CRs).

2.10.2. Manage intelligence supportability planning, to include an Intelligence Sensitivity Determination (ISD) process for supported leadership, Intelligence Supportability Analysis (ISA), as appropriate, and document intelligence support requirements.

2.10.3. Provide Intelligence Health Assessments (IHAs), as appropriate.

2.10.4. Assist in obtaining relevant threat support for program protection planning, critical program information identification, anti-tamper measures, and Supply Chain Risk Management (SCRM).

2.10.5. Partner with PMs to ensure risk associated with intelligence-sensitive programs are considered as part of a program's overall risk assessment that align with program timelines.

**2.11. Implementing Commanders.** Implementing commanders which include Commander AF Materiel Command (AFMC/CC) and Commander, Space Systems Command (SSC) or delegate, will:

2.11.1. Provide the SAE, PEOs, and PMs support capabilities to facilitate execution of the acquisition execution chain of authority. This includes technical assistance, infrastructure, modeling and simulation, test capabilities, laboratory support, professional education, training and development, management tools, human resources, and all other aspects of support.

2.11.2. Provide pertinent science and technology activity information to PEOs about technological advancements from DoD laboratories which could be leveraged to support program objectives.

2.11.3. Provide the Chief of Staff of the United States Air Force (CSAF), Chief of Space Operations of the USSF (CSO), SAE, PEO, and MAJCOM/FLDCOM commanders support for requirements formulation and phasing, continuous capability and technology planning, and development of acquisition and life cycle sustainment strategies.

2.11.4. Support all domestic, international, and security cooperation (including FMS) programs in which the DAF participates in accordance with a signed agreement.

2.11.5. Ensure timely and accurate intelligence analysis, information, and support is provided to and integrated into the acquisition process; this includes designating an intelligence focal point. Ensure the identification and documentation of derived intelligence requirements for intelligence products and services, and assessment of intelligence-related risk during all phases of the life cycle. Integrate intelligence supportability analysis into all life cycle models and programming.

2.11.6. Develop processes and procedures for accurate collection and reporting of 10 USC Section 2464 and 10 USC Section 2466 information. Maintain depot maintenance workload mix database and analysis products.

2.11.7. Collaborate with lead commands and PMs. Collect, validate, and maintain current requirements, priorities, and funding data by system for all elements of depot activation and report data to Headquarters DAF upon request. Establish a central repository for depot activation requirements data, to include associated rationale and impacts.

2.11.8. Conduct planning to support requirements and capability development activities and decisions.

2.11.9. Charter and appoint Product Group Managers when enterprise management of materiel used to support multiple weapon systems is desired to improve interoperability and decrease costs through commonality.

2.11.10. Nominate a MAJCOM/FLDCOM Competition and Commercial Advocate and Alternate (reference *Air Force Federal Acquisition Regulation Supplement (AFFARS)*, Mandatory Procedure (MP) 5306.502).

2.11.11. Collect combat damage data with the purpose of enhancing survivability, reducing casualties, and increasing operational readiness in support of Joint Air Combat Damage Reporting.

**2.12. Authorizing Official (AO).** The appointed AO formally assumes responsibility for operating Information Systems and Platform Information Technology (PIT) systems at an acceptable level of risk.

2.12.1. DoD Information Systems and Platform Information Technology systems are not permitted to operate on or connect to any internal or external network without AO approval.

2.12.2. Each SAF Chief Information Officer (CIO) appointed AO makes specific decisions for systems under their purview in accordance with DoDI 8510.01, *Risk Management Framework (RMF) for DoD Information Technology*; AFI 17-101 and AFI 17-130, *Cybersecurity Program Management*.

2.12.3. The AO appointed by the A2/6 as Head of the United States Air Force (USAF) intelligence community element accredits and makes associated risk management decisions for all USAF Sensitive Compartmented Information (SCI) assets and data; ISR mission assets and data (regardless of classification) under Intelligence Directive 503, *Intelligence Community Information Technology Systems Security Risk Management, Certification, and Accreditation*. An SCI asset includes all/any system, subsystem, component, etc., that accesses, uses, processes or stores SCI data, as defined by ICD 703, *Protection of Classified National Intelligence, Including Sensitive Compartmented Information*.

**2.13. Operational Command, Direct Reporting Unit (DRU), and Field Operating Agency (FOA) Commanders.** Operational Commands ("lead command" or "using command"), FOAs Commanders, Space Operations Command, Space Systems Command, and Space Training and Readiness Command (STARCOM) or delegate will:

2.13.1. Develop and document capability-based requirements and accomplish analysis to ensure needs of capability users are met. Advocate needs through the requirements process.

2.13.1.1. Collaborate with implementing commands to integrate long-term studies, existing and future concepts, as well as existing and planned systems into DAF and DoD investment strategies.

2.13.1.2. Submit requests to the implementing command for materiel resources in support of early program planning to meet operational capability needs.

2.13.1.3. Coordinate with the PM on opportunities to trade between capability and system cost through the system's lifecycle.

2.13.1.4. Coordinate with supporting intelligence support entity to ensure relevant authoritative intelligence information is informing capability-based requirements that are likely to result in a survivable and effective operational capability in intended threat environment. Authoritative intelligence is that intelligence produced or provided by the DoD intelligence community authoritative producer as defined by the DoD Functional Manager for All-Source Intelligence (DoD FM/A). For additional information, reference DoDI 3115.17, *Management and Oversight of DoD All-Source Analysis*.

2.13.2. Establish standardized procedures to review, validate, certify, prioritize, and implement modification proposals. Ensure validated modification proposals are coordinated with the appropriate PM and Chief Engineer for systems engineering, program planning, testing, and cost estimation consideration. As required by the PM, Operational Commands, Direct Reporting Units and Field Operating Agencies provide appropriate funding to support these activities. **Note**: Time Compliance Technical Order (TCTO) kits are managed as prescribed by AFI 23-101, *Materiel Management Policy*; AFMAN 23-122, *Materiel Management Procedures*; and TO 00-5-15, *Air Force TCTO Process*.

2.13.3. Identify and provide the PM planned National Environmental Policy Act (NEPA)/Executive Order (EO) 12114, *Environmental Effects Abroad of Major Federal Actions* analysis requirements, responsibilities and schedules for actions relating to the basing of the system.

2.13.4. Generate use, cost, and maintenance data to support sustainment metric reporting.

2.13.5. Establish policy to assure the preservation of baselined characteristics to a system or end-item. Ensure any configuration modification or maintenance procedure change is approved by the PM. Ensure any new operational change or degradation of baselined characteristics to a system or end-item is coordinated with and assessed by the PM.

2.13.6. Nominate a MAJCOM/FLDCOM Competition and Commercial Advocate and Alternate (reference AFFARS MP 5306.502).

2.13.7. Plan and advocate for programming and budgeting for the life cycle of the systems, to include materiel modification requirements.

2.13.8. Provide updates to the system operations concept throughout the life cycle of the program. System operations concepts updated with planned modifications and upgrades allow the acquisition, logistics, and test communities to better understand the intended use of the system.

**2.14. Service Intelligence Center Commander.** Service Intelligence Center Commander will support Validated Online Lifecycle Threat process as defined in Defense Intelligence Agency (DIA) guidance.

**2.15. Acquisition Security Professional.** Acquisition Security Professionals, when assigned, support PMs and Chief Engineers through identification and integration of enhanced security measures for essential technology elements and enabling technology across the life cycle.

**2.16. Technology Executive Officer (TEO).** The TEO is the DAF Science and Technology (S&T) functional equivalent of a PEO and executes responsibilities for the DAF S&T portfolio consistent with guidance contained in AFI 61-101, *Management of Science and Technology*, and **paragraph 3.5**.

## Chapter 3

## DEPARTMENT OF THE AIR FORCE OPERATION OF THE DEFENSE ACQUISITION SYSTEM

**3.1. Capability-Based Requirements Development.** The operational community is responsible for developing capability-based requirements as defined in AFI 10-601, *Operational Capability Requirements Documentation and Validation*, Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 5123.01I, *Charter of the Joint Requirements Oversight Council (JROC) and Implementation of the Joint Capabilities Integration and Development System (JCIDS)*, other applicable 10-series DAF Publications, and the A5/7 *Capability Development Guidebooks, Vol 2*, located on the DAF Portal. Reference pathway-specific instructions and guides for additional requirements.

**3.2. Milestone Decision Authority Determinations and Certifications.** The MDA implements all program milestone determination and certification requirements as prescribed by statute or DoD policy. Reference AAFDID and pathway publications for guidance on MDA/DA requirements.

**3.3. Acquisition Review Boards and Acquisition Strategy Panels.** Reviews are integral to a deliberative process that supports DAF leadership in making informed milestone decisions and in performing their acquisition execution responsibilities.

3.3.1. Acquisition Review Board (also referred to as DAF Review Boards).

3.3.1.1. Acquisition Review Boards are forums chaired by the SAE, or as delegated, for conducting major decision reviews (in- or out-of-cycle).

3.3.1.2. Acquisition Review Boards are used to develop the DAF corporate consensus prior to an Office of the Secretary Defense (OSD) Defense Acquisition Board (pre-Defense Acquisition Board within DAF), Information Technology Acquisition Board, or similar board. The Acquisition Review Board should be conducted prior to OSD Integrated Product Team reviews. The SAE, or as delegated, determines if a program requires an Acquisition Review Board when the DAE is the MDA.

3.3.1.3. The Acquisition Review Board process is mandatory for all programs where the SAE is the MDA unless waived by the SAE. The PEO may recommend what type of Acquisition Review Board is necessary: full, mini (tailored attendance), or paper. Contact SAF/AQX or SAF/SQX for Acquisition Review Board templates and additional information.

3.3.1.4. PEOs execute a tailored review process on major decisions for other programs.

3.3.2. Acquisition Strategy Panel.

3.3.2.1. The Acquisition Strategy Panel supports the MDA. Acquisition Strategy Panels are forums to evaluate proposed acquisition strategies to ensure all alternatives have been considered and the best recommendation is provided to the program's MDA for approval. Unless delegated in writing, the MDA is the Acquisition Strategy Panel Chair (for ACAT I and equivalent programs, the SAE is the Chair), and is the sole authority to approve members of the panel.

3.3.2.2. The PM holds an Acquisition Strategy Panel with the MDA for all pathway programs presenting a new strategy or a significant revision to an approved strategy. (The SAE, or PEO may waive holding an Acquisition Strategy Panel if the MDA has been delegated).

3.3.2.3. Information concerning Acquisition Strategy Panels, such as the current draft template for briefings, can be found at the DAF Portal at the "SAF/AQXE - Execution/Oversight" page in the Secretariat/Acquisition Strategy Panel section or on the Office of the Assistant Secretary of the Air Force for Space Acquisition & Integration (SAF/SQXP) Secretariat SharePoint page. Additionally, similar information pertaining to non-SAE chaired Acquisition Strategy Panels can be found by contacting the Field Acquisition Centers of Excellence.

**3.4. Configuration Steering Board.** The Configuration Steering Board reviews all requirements changes and any significant technical configuration changes that may result in cost and schedule impacts to the program. Changes are only approved after funds are identified and schedule impacts mitigated. The Configuration Steering Board also provides the PM the opportunity to propose changes, with supporting rationale addressing operational implications that may be necessary to achieve affordability or will result in a more cost-effective product.

3.4.1. Annual Configuration Steering Boards are required for ACAT I programs, reference DoDI 5000.85 for more information. **(T-0)**

3.4.2. Configuration Steering Boards typically are conducted starting at Milestone A.

3.4.2.1. Annual Configuration Steering Board reviews may be conducted with the annual PEO Portfolio and Program Management Reviews.

3.4.2.2. Out-of-cycle Configuration Steering Board may be conducted to address specific events. These events include:

3.4.2.2.1. CIP breach.

3.4.2.2.2. Proposed changes to program requirements expected to result in significant technical configuration changes that could result in cost (estimated greater than $100 million) and schedule impacts (estimated delay of over six months).

3.4.2.3. Participants for ACAT I and equivalent Configuration Steering Boards include: SAF/AQ or SAF/SQ (Chair), Office of the Under Secretary of Defense (Acquisition and Sustainment (OUSD(A&S)) (Rep), CSAF Rep (A4L), lead command Requirements (e.g., Air Combat Command (ACC)/A5/8/9), AF/A5/7, Joint Staff, Assistant Secretary of the Air Force (Financial Management and Comptroller) (SAF/FMB), SAF/AQ or SAF/SQ Military Deputy, and the PEO for the program. Additional Configuration Steering Board attendees may include: SAF/AQX, SAF/AQR, SAF/AQI, SAF/AQP, SAF/AQL, SAF/AQQ, SAF/SQX, SAF/SQS, SAF/SQA, SF/Chief Strategy and Resource Officer, AFMC/CC/CV/CA, SF/CC/CV/CA, USSF/T&E, General Counsel of the Air Force/Acquisition, Technology, and Logistics Division (SAF/GCQ), AF/A8P, Deputy

Assistant Secretary for Cost and Economics (SAF/FMC), SAF/CN, Secretary of the Air Force/Small Business (SAF/SB), SAF/AQD, AF/A2/6, AF/A4, Acquisition, Fiscal Law and Litigation Division (AF/JACQ), AF/SE, Directorate of Air Force Test and Evaluation (AF/TE), Air Force Operational Test and Evaluation Center (AFOTEC), Space Systems Command Commander, Head of Contracting Authority, USSF/CTIO (Chief Technology and Innovation Officer), and Director, Operational Test and Evaluation (DOT&E).

3.4.2.4. Configuration Steering Board guidance and briefing templates are located at the Acquisition functional page on the SAF/AQXE Oversight SharePoint page or on the SAF/SQXP Secretariat SharePoint page.

3.4.3. The PEO ensures the intent of the Configuration Steering Board is met for other programs by:

3.4.3.1. Ensuring a process is in place to review all requirements changes and any significant technical configuration changes having the potential to result in cost and schedule impacts to the program. This process includes appropriate stakeholders from the lead command and using command or agency, HAF, and the acquisition execution chain of authority. **(T-1)**

3.4.3.2. Considering a program change or termination recommendation if a CIP Breach makes the program ineffective for its intended operational environment or by not approving changes unless funds are identified and schedule impacts mitigated. **(T-1)**

3.4.3.3. Providing the PM, the opportunity to propose changes, with supporting rationale addressing operational implications which may be necessary to achieve affordability or will result in a more cost-effective product. **(T-1)**

**3.5. Science and Technology.** Science and technological advancements and breakthroughs play a crucial role in providing warfighters or users with superior operational systems. Examples of programs and processes to demonstrate, mature, and transition technologies include technology demonstrations, experiments, operational exercises, war games, modeling and simulation, DoD and DAF research efforts in the DoD laboratories, and commercial sources. For additional information on science and technology activities refer to AFI 61-101.

3.5.1. PEOs provide identified portfolio needs and associated or recommended technology solutions to the DAF Technology Executive Officer. **(T-2)**

3.5.2. PEOs can use Capability Collaboration Teams comprised of Subject Matter Experts from MAJCOM/FLDCOM s, Centers and PEOs, and the Technology Executive Officer to work collaboratively to fully understand MAJCOM/FLDCOM and Core Function Leads-documented capability needs.

3.5.3. PMs and Chief Engineers should participate in Capability Collaboration Teams and other planning efforts to maximize the extent of potential materiel solutions derived from MAJCOM/FLDCOM -documented capability needs and associated technology enablers.

3.5.4. During transition from science and technology effort to an acquisition program, the PM should coordinate with the science and technology project lead to capture information developed during the science and technology effort. Evaluation results may lead to developing an operational capability requirements document to transition mature and affordable technologies for new programs or modifications to existing programs. Science and technology efforts transitioning to an acquisition program and entering the defense acquisition system should be sufficiently mature enough to meet the phase-specific requirements.

3.5.5. PMs and Chief Engineers consider the use of Small Business Innovation Research and Small Business Technology Transfer when practicable. See AFI 61-102, *Small Business Innovation Research and Small Business Technology Transfer (STTR) Programs*, for more information.

**3.6. Program Work Breakdown Structure.** The PM develops and tailors a Program Work Breakdown Structure. Detailed guidance on the work breakdown structures for defense materiel items is in Military Standard (MIL-STD)-881F, *Work Breakdown Structures for Defense Materiel Items*.

**3.7. Integrated Master Plans (IMP) and Integrated Master Schedules (IMS).** Refer the *DoD IMP and IMS Preparation and Use Guide* for additional information.

**3.8. Performance Measurement Baseline Analysis.** The PM performs cost, schedule, and risk analysis of the contractor's Performance Measurement Baseline to assure continuing progress and program applicability. The Performance Measurement Baseline should contain sufficient detail, account for all scope, and reflect accurate schedules. The Performance Measurement Baseline is reviewed to assess implementation of the contractor's earned value system via the Integrated Baseline Review process.

**3.9. Earned Value Management (EVM).** EVM is a key integrating process in the management and oversight of acquisition programs including information technology (IT) programs. The qualities and operating characteristics of the EVM Systems are described in American National Standards Institute/Electronic Industries Alliance (ANSI/EIA) Standard 748, *EVM Systems*. The Defense Contract Management Agency is responsible for EVM Systems compliance and ensuring the integrity and application effectiveness of the contractor's EVM Systems.

3.9.1. PMs will employ EVM and EVM Systems per *Defense Federal Acquisition Regulation Supplement* (DFARS) subpart 234.2, current edition and DoDI 5000.85. **(T-0)** EVMS requirements can be found in the Major Capabilities section of the AAFDID.

3.9.1.1. Waiving EVM or EVM System use requires SAE and implementing command Senior Contracting Official (SCO) approval per AFFARS Subpart 5301.4 and DoDI 5000.85. **(T-0)** Coordinate requests for tailoring or waiving EVM and EVM System requirements for MDAPs with SAF/AQX or SAF/SQX who, in turn, coordinates with the Acquisition Data and Analytics/Integrated Program Management Division. SAE waivers should be obtained prior to implementing DFARS deviations.

3.9.1.2. Include EVM applicability with reference to authorizing documents (regulations, policies, instructions), waivers, and business case or cost benefit analysis (if applicable) in the program acquisition documents submitted to the MDA.

3.9.2. Where EVM System is required, the PM or PEO ensures that:

3.9.2.1. The solicitation and contract contain the appropriate DFARS and AFFARS provisions or clauses: DFARS 252.234-7001, 252.234-7002 and AFFARS clause 5334 (EVM), and DFARS clause 252.242-7005 (Contractor Business Systems). **(T-0)**

3.9.2.2. EVM is reported in accordance with DoDI 5000.85. **(T-0)**

3.9.2.3. Integrated Baseline Reviews are conducted in accordance with DoDI 5000.85 and DFARS clause 252.234-7002. For additional information, see the *AF Integrated Baseline Review Process Guide.* **(T-0)**

3.9.2.4. The IMP is prepared based on the latest version of the *DoD IMP and Integrated Schedule Preparation and Use Guide.* **(T-0)**

3.9.3. EVM integrates the cost, schedule, and technical requirements of the program and links them with the project's risk management process. The PM performs the following EVM analysis and reporting (reference DoDI 5000.85):

3.9.3.1. Validate compliance of Integrated Program Management Report (or Contract Performance Report on older contracts) and Contract Funds Status Report, which include reconciliation between the Integrated Program Management Report and Contract Funds Status Report, with the Contract Data Requirements List. For contracts requiring submission to the OSD EVM Central Repository, acceptance or rejection of each document is in accordance with EVM – Central Repository requirements. **(T-0)**

3.9.3.2. Use EVM performance analysis (cost or schedule variance, indices, schedule margins, critical or near critical path, risks, Performance Measurement Baseline integrity, etc.) to ensure continuing progress and program applicability. Based on this analysis, the PM develops a risk based independent Estimate at Completion.

3.9.3.3. Prior month level-one data along with the PM's independent estimate at completion for each contract is reported for inclusion in the MAR. See **Chapter 11** for more information.

3.9.4. EVM requirements for Over Target Baselines or Over Target Schedules.

3.9.4.1. An Over Target Baseline is defined as an EVM baseline that exceeds contract value. An Over Target Schedule is defined as a schedule that exceeds the contractually required delivery dates.

3.9.4.2. The PM ensures SAF/AQ or SAF/SQ is notified through the MAR of any Over Target Baseline or Over Target Schedule prior to implementation and upon completion.

3.9.4.3. Contractor reporting may not be waived while implementing an over-target baseline, unless otherwise agreed to by SAF/AQX or SAF/SQX. At a minimum, Actual Cost Work Performed is reported during the Over Target Baseline or Over Target Schedule in Format 1 of the Integrated Program Management Report (or Contract Performance Report on older contracts).

3.9.4.4. Programs implementing an Over Target Baseline or Over Target Schedule need to conduct a subsequent Integrated Baseline Review on the revised baseline.

3.9.5. Single Point Adjustment (SPA), sometimes referred to as re-baselining, refers to eliminating cumulative performance variances (setting cost or schedule variances to zero). SPAs are not performed solely to improve contract performance metrics. Therefore, SPAs, which set cost variances to zero, are not permitted without the execution of an Over Target Baseline formal reprogramming action or PEO authorization with coordination by SAF/AQX or SAF/SQX.

**3.10. Affordability Analysis.** All MCA programs require an Affordability Analysis. **(T-0)** See DoDI 5000.85_DAFI 63-151, for additional information.

**3.11. Post Implementation Review.** Post Implementation Reviews are executed in accordance with pathway specific publications. For more information, refer to DoDI 5000.82, *Acquisition of Information Technology (IT)* and the AAFDID.

**3.12. Independent Reviews.** The PEO and implementing command/CCs, with SAF/AQ or SAF/SQ coordination, may conduct independent reviews (e.g., Supply chain, Readiness of Combat Capabilities Review or Technology, Acquisition and Sustainment Reviews) of programs and other acquisition activities to gain insight to improve the acquisition and sustainment of weapons systems. These reviews include recommendations with the intent to identify and address systematic problems in process, training, or organization. Independent reviews can also include Independent Program Assessments whenever directed by the MDA. For best practices and schedule recommendations refer to DAFPAM 63-128.

**3.13. Weapon and Cyber Legality Reviews.** The PM ensures that reviews for legality are accomplished for weapons, weapon systems, and cyber capabilities at the earliest stage possible in accordance with AFI 51-401, *The Law of War*, for all applicable acquisition and modification programs.

**3.14. Program Terminations.** It may be necessary to terminate a program for a variety of reasons including a Presidential, congressional, DoD, or DAF Leadership decision, change in threat, poor contractor performance, or withdrawal of funding. The termination decision and plan is approved by the MDA and documented in an ADM. SAF/AQC, on behalf of SAF/AQ and SAF/SQ, acts as the DAF Department liaison for terminations per DFARS 249.7001 and Procedures, Guidance, and Information (PGI) 249.70, *Special Termination Requirements*.

3.14.1. The PM notifies the Head of Contracting Activity and SAF/AQC of all program terminations of AML programs upon the termination decision. The PM also notifies SAF/SB if termination involves small businesses. The Head of Contracting Activity or SAF/AQC notifies OSD when applicable and coordinates with the Assistant Secretary of the Air Force (Financial Management and Comptroller)/Budget and Appropriations Liaison Directorate (SAF/FML) and Assistant Secretary of the Air Force (Legislative Liaison) (SAF/LL) to make congressional notifications prior to termination actions.

3.14.2. Upon termination decision, the PM develops a termination plan to describe how to close the program down in an expeditious, orderly manner with the least impact to the government.

3.14.3. For the termination plan templates, reference DAFPAM 63-128.

**3.15. Exportability Reviews and Waivers.** The PM will review at each milestone the feasibility of exportable and interoperable configurations based on an analysis of the current and future international market and mission needs. **(T-0)** PMs opting for a U.S.-only design will comply with approval and reporting guidance in DoDI 5000.85. **(T-0)**

3.15.1. The PM for MTA pathway programs will review the feasibility of exportable and interoperable configurations as part of transition planning. **(T-0)**

3.15.2. The PM for MCA pathway programs will review and document the feasibility of exportable and interoperable configurations as part of Milestone reviews (reference DoDI 5000.85_DAFI 63-151). **(T-0)**

3.15.3. In accordance with DoDI 5000.85_DAFI 63-151, MDAPs pursuing a U.S.-only design and not planning for system export require an MDA-approved exportability waiver.

3.15.4. Waivers will be coordinated with Secretary of the Air Force International Affairs, Policy, and Programs Directorate (SAF/IAP) prior to official request submission to the MDA.

**3.16. National Security System Designation Determination.** NSS are as defined in 44 USC 3552(b)(6), 44 USC 3553(e)(2) and 44 USC 3553(e)(3). NSS determination will be performed for all programs and documented in the acquisition strategy, Air Force Information Technology Investment Portfolio Suite (ITIPS), and the Project Management Resource Tool (PMRT) tool. **(T-1)**

3.16.1. The PM in coordination with the program protection representative, the Trusted Systems and Networks (TSN) representative, and other program stakeholders, will make an NSS determination using the criteria found in **Figure A4.1**., **Attachment 4** as a guide for any system that shares information prior to program initiation. **(T-0)** This information will be reviewed for any change in status at least annually. **(T-1)** Status of NSS determination will also be included in PMRT. **(T-1)**

3.16.2. Contact SAF/AQX or SAF/SQX for additional guidance on resolving disputes between the PM and external offices concerning NSS determinations.

3.16.3. The PM will ensure security and engineering activities applicable to NSS are performed. Reference **Chapter 6** for more information.

# Chapter 4

## PROGRAM ACTIVITIES

**4.1. Program Integration.** It is a responsibility of all PMs to demonstrate and document how they integrate cost, schedule, performance, and threat risk information into program decisions. Successful program integration requires involvement of each functional expert within the program office to provide informed guidance and recommendations.

**4.2. Program Documentation.** The PM is responsible for completing all applicable program documentation as outlined by statute and policy.

4.2.1. Document Content. All new and existing programs requiring OSD oversight ensure documentation is prepared consistent with OSD approved outlines or templates. For other programs, the MDA determines how to capture the information requirements. The PM is responsible for ensuring that the content of the plans meets all applicable statutory and regulatory requirements.

4.2.2. Document Approval Authority. Document approval authority is included in the AAFDID, functional specific guidance and pathway-specific policy.

4.2.2.1. When the SAE is the MDA, the SAF/AQ or SAF/SQ military or principal deputy has signature authority for MDA approved documentation, unless restricted by statute, regulation, or instruction.

4.2.2.2. If draft documentation is required for a review, the document is approved at the level below the approval authority. For example, if the SAE is the approval authority, then the document is approved by the PEO prior to the review.

4.2.3. Document Coordination. Documentation in the form of digitalized information (e.g., system models, simulations, product data analysis) that is sourced from data-centric environments and architectures, and with positive authoritative validation, may be utilized in lieu of document-based formats (e.g., printouts, slides, .pdf) with prior agreement from OSD and the MDA to coordinate data accessibility, understanding, and compatibility in support of a review or documentation requirement.

4.2.3.1. The PM is responsible for coordination within the PEO chain.

4.2.3.2. For documents approved outside of the PEO chain, once the PEO approves the document it should be sent directly to the approval authority of the document. Prior to PEO approval, the PM also coordinates with outside organizations that will directly support the implementation of the plan. Once the document is approved by the PEO, it is the responsibility of the approval authority to coordinate the document with other HAF, MAJCOM, FLDCOM or other organizations required for the approval authority signature. The approval authority should consolidate comments from the organizations required for their approval, determine if the document is ready for signature, concur or non-concur, and present a consolidated view to the PM and PEO.

4.2.3.3. OSD approved documentation is coordinated in accordance with OSD direction. Unless waived by the SAE, the PM will coordinate documentation approved or requested by the DAE through the SAE.

4.2.3.4. Offices must expedite coordination within the time specified by the MDA, PEO, or PM and either concur or non-concur. Concurrence and coordination by parties involved may not be necessary for an MDA to make a decision. However, staff packages should reflect the non-concur and stated reasons so the MDA can make an informed decision. Format driven changes should not result in delaying the coordination process. The PM, reviewing office, and staff should use automated tools, as available, to streamline coordination and approval.

4.2.4. Document Storage. PM ensures program documentation is maintained and made available electronically in adherence to AFI 33-322 and are disposed in accordance with the Air Force Records Disposition Schedule. Acquisition documentation for all pathway programs will be retained through the life of the system in a central repository. **(T-1)** The recommended central repository is the Acquisition Information Repository. The Acquisition Information Repository also meets the requirement for official electronic records management. The PM will submit all signed Acquisition Decision Memoranda and final milestone documents for MDAPs, MDAP equivalents, and special interest programs to the Acquisition Information Repository within five business days of document approval. **(T-0)**

**4.3. Acquisition Strategy.** The Acquisition Strategy is the overall life cycle strategy for the system. The PM develops an Acquisition Strategy that documents the life cycle strategies necessary to satisfy statutory and regulatory requirements. **(T-0)** For more information, refer to the Federal Acquisition Regulation (FAR) Subpart 7.1, DFARS Subpart 207.1, the applicable DoDI 5000-series regulation(s), the AAFDID and DAFPAM 63-128.

4.3.1. The MDA approves the Acquisition Strategy prior to release of a formal solicitation. **(T-1 (if MDA is PEO or delegated))**

4.3.2. At the discretion of the MDA, the Acquisition Strategy for a modification may be an annex to the existing and approved system strategy.

4.3.3. Fact-of-life changes, such as updates to schedule and funding adjustments, do not require a re-coordination of the Acquisition Strategy unless they drive a significant change (e.g., change in contract type, change in quantities) in the approved strategies or Acquisition Program Baseline (APB).

4.3.4. Existing programs that do not currently have a strategy should prepare an Acquisition Strategy when the program enters a new milestone or decision point.

4.3.5. Acquisition strategy panel charts used as the Acquisition Strategy need to meet all statutory and regulatory requirements.

**4.4. Program Baseline.** The PM ensures each program establishes goals for cost, schedule, and performance parameters (or alternative quantitative management controls) to describe the program over its life cycle. **(T-0)**

4.4.1. The baseline is approved by the MDA. Approved program baseline parameters will serve as control objectives. Reference the AAFDID, pathway-specific guidance, Title 10 USC Section 4371-4375, *Cost Growth Unit Reports (Nunn-McCurdy)*, and Title 10 USC Section 4214, *Baseline Description*, for detailed requirements

4.4.2. For programs requiring an Acquisition Program Baseline (APB), the original APB is prepared prior to the program entering Engineering and Manufacturing Development or program initiation, whichever occurs later. Review the APB at each subsequent milestone decision and full rate production to determine if updates or changes are necessary. Update the APB at significant or critical 10 USC Section 4371-4375 (Nunn-McCurdy) cost breaches.

**4.5. Risk-Based Program Management and Decision Making.** PMs for all programs, including commercial-off-the-shelf (COTS) and non-developmental item programs, identify, analyze, track and mitigate risks addressed during program reviews. **(T-1)**

4.5.1. The PM prepares a risk management plan that documents the program's use of standard risk management processes **(T-0)** (reference pathway supplements, DAFPAM 63-128 or DoDI 5000.83_DAFI 63-113, and the *Department of Defense Risk, Issue, and Opportunity Management Guide for Defense Acquisition Programs*). Among other content, the risk management plan addresses how the program is performing and integrating risk-based source selection, system safety and mission assurance, T&E, threat, intelligence supportability, acquisition security, supply chain, ESOH, Human System Integration (HSI), industrial base constraints, and supply chain risk management. Additionally, it addresses cost, schedule, technical, product support, operational, cybersecurity, and system security risks. The risk management plan for space programs addresses risk-based performance for space debris mitigation assessments and documentation for space and launch systems per AFI 91-202, *The US Air Force Mishap Prevention Program*. It also describes the responsibilities of cross-functional risk management Integration Product Team or equivalent. The risk management plan can be incorporated into the Acquisition Strategy or other appropriate planning document. Link the risk management plan to risk management activities in other planning documents and continually update the risk management process and its implementation throughout the system's life cycle.

4.5.1.1. The PM uses the likelihood criteria, consequence criteria, and 5x5 risk matrix provided in **Attachment 3, Figure A3.1., Figure A3.2, and** Tables **A3.1-A3.4,** to evaluate, document, and present cost, schedule, performance, and other program risks. **(T-1)** These likelihood and consequence criteria support risk comparability across programs. However, if the PM determines that the criteria are not appropriate for assessing and managing a program's risks, the PM may tailor the criteria, if approved by the MDA, in accordance with the tailoring guidance in **Chapter 1**. Reference DAFPAM 63-128 for more information.

4.5.1.2. The PM will prepare risk handling and mitigation plans for all identified 5x5 risk matrix high, moderate, and selected low risks unless waived by the MDA. The PM ensures a mechanism is in place to track and archive all risks and handling and mitigation plans throughout the program's life cycle.

4.5.1.3. The PM presents risk information as a part of all programs, technical, and milestone decision reviews or to support other decision points unless waived by the MDA. On the risk matrix, the PM plots, and is prepared to discuss, each of the program's identified high and moderate risks and their corresponding handling and mitigation plans unless waived by the MDA. The PM includes all High and Serious ESOH and technical program risks identified using MIL-STD-882E, *DoD Standard Practice for System Safety*, plotted on the standard 4x5 Risk Assessment Code (RAC) matrix using the translation matrix in **Attachment 3** unless waived by the MDA. The PM coordinates cybersecurity risk information with the MDA and AO prior to decision reviews, reference DoDI 5000.90, *Cybersecurity for Acquisition Decision Authorities and Program Managers* for more information. **(T-0)** The PM should identify to the MDA and the PEO if there is a risk of the AO non-concurring at the decision review.

4.5.2. Risk-based Source Selection. The source selection approach, as part of the Acquisition Strategy, is developed to select the right contractor to reduce risk over the life cycle of the program and get the best business deal for the DAF. This includes identifying supplier risks, foreign influences risks, cybersecurity vulnerabilities (if applicable) and those identified in **paragraph 6.13**. This should inform key technical and appropriate program risks and the formulation of source selection evaluation criteria. Source selection guidance and procedures are contained in FAR Part 15, DFARS Part 215, AFFARS 5315 and AFFARS Mandatory Procedure 5315.3.

4.5.3. Cost Risk Management. The PM has responsibility for cost risk management and may adjust program decisions based on potential cost variation and uncertainties, or market research. Identify uncertainty feeding the overall programs' costs from the risks and risk handling and mitigation activities associated with prediction of future costs based on current knowledge of technical, schedule and market research. Uncertainty in this case is program risk associated with the ability to achieve life cycle cost objectives. A program's cost estimator has the responsibility for supporting the PM's integrated cost risk management efforts, utilizing methods and cost management principles outlined in AFPD 65-5, *Cost and Economics*; and AFI 65-508, *Cost Analysis Guidance and Procedures*.

4.5.4. Schedule Risk Management. The PM has execution responsibility for schedule risk management and should utilize appropriate tools to develop, guide, and manage associated risks. Schedule risk includes schedule uncertainty due to manufacturing, contracting, and subcontracting, testing, government rules or impediments, uncertainty in work, software development, unrealistic schedules, natural causes, and complexity. All programs maintain an IMS and review it frequently including analyzing a program's "critical path" to determine and manage potential risks associated with schedule slips.

4.5.5. Technical Risk Management. The Chief Engineer, in support of the PM, has execution responsibility for technical risk management, and utilizes systems engineering throughout the life cycle to manage program technical risks. Technical risk management includes risk-based prototype planning and development. It also considers design, manufacturing, technology maturity, forecast threat advancements, intelligence supportability, cybersecurity risks, software development, risks of mishaps, nuclear surety, integration, interoperability, and supportability, testing risks, and threats to mission critical functionality and critical program information.

4.5.5.1. The Chief Engineer, in support of the PM, should identify and track risks associated with achieving the appropriate Technology Readiness Levels (TRLs) of all critical technologies. **Note**: Technology Readiness Levels values are indicators of technical maturity and not risk since they are unrelated to consequence of occurrence. See the *DoD Technology Readiness Assessment (TRA) Guidance* for information on TRLs.

4.5.5.2. The Chief Engineer ensures that relevant engineering information and recommendations, including underlying assumptions and risks, are made available to the PM and senior leaders in the acquisition execution chain of authority in accordance with DoDI 3200.20. **(T-0)**

4.5.5.3. Risk of a Mishap Identification, Assessment, and Acceptance. SAF/AQR (DAF lead) will coordinate with SAF/SQA to implement the following provisions, for space systems and programs. SAF/SQ retains decision authority on high-risk acceptance for space systems and programs.

4.5.5.3.1. Refer to AFI 91-202, *The US Air Force Mishap Prevention Program,* for detailed direction regarding assessment documentation of the risks of mishaps and SAF/AQ risk acceptance authorities.

4.5.5.3.2. Acquisition and sustainment programs can identify hazards and risks of mishaps through multiple processes. Identification and assessment processes include, but are not limited to, the internal Program Office System Safety process defined in AFI 91-202; the independent USAF Airworthiness assessment and approval procedures defined in DAFI 62-601, *Airworthiness*; and the Aircraft Structural Integrity Program assessment criteria as defined in DAFI 63-140 and MIL-STD 1530.

4.5.5.3.3. In the event a non-space Program Office identifies a potential High risk of a mishap on a fielded system, the PEO must as soon as possible notify the system Lead Command and SAF/AQR. The Lead Command and PEO must then determine whether they should remove the system from service until the Program Office can either eliminate or mitigate the potential mishap cause. If removal from service is not a viable option, then the PEO must work with the Lead Command and SAF/AQR to determine how to reach agreement on an Interim High-risk acceptance by either the Lead Command or SAF/AQ or both. The Interim High-risk acceptance is to allow the Program Office the time to prepare and staff a request in accordance with AFI 91-202 for SAF/AQ and the Lead Command to accept formally the High risk for the time-period needed to eliminate or mitigate the potential mishap cause. This process is to meet the DoD policy that DoD cannot expose people, equipment, or the environment to a known mishap cause without first accepting the risk.

4.5.5.3.4. Regardless of the method by which the non-space Program Office has become aware of a potential High-risk of a mishap on a system, the Program Office must work with SAF/AQR to identify the information that must be included in the request for SAF/AQ and the system Lead Command to accept the High risk of a mishap. At a minimum, the package must include the following:

4.5.5.3.4.1. Validation of the High-risk assessment in accordance with the staffing process defined in AFI 91-202.

4.5.5.3.4.2. The potential mission impacts of removing the system from service until the potential mishap cause can be eliminated or the risk mitigated.

4.5.5.3.4.3. The potential options to eliminate or mitigate the risk of a mishap.

4.5.5.3.4.4. The recommended option(s) and the rationale for the recommendation(s), to include the rationale for not implementing identified mitigation options.

4.5.5.3.4.5. The cost, schedule, and performance impacts, and estimated losses of each potential elimination or mitigation option.

4.5.6. Independent Technical Risk Assessments (ITRA).

4.5.6.1. ITRAs are conducted and approved by the Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)) on all ACAT ID programs in accordance with DoDI 5000.88. **(T-0)**

4.5.6.2. SAF/AQR conducts ITRAs for non-space ACAT IB/IC programs in accordance with DAF *Independent Technical Assessment Guidebook* with support from center-level engineering functional offices. **(T-1)** SAF/SQA conducts ITRAs in collaboration with SAF/AQR for space ACAT 1B/1C programs.

4.5.6.3. The PM will support ITRA execution by:

4.5.6.3.1. Planning ITRAs as a life cycle event in the program plans, including but not limited to Acquisition Strategy, Systems Engineering Plan (SEP), and IMS. **(T-1)**

4.5.6.3.2. Providing access to programmatic and technical information and facilitating ITRA team visits to the program office, product centers, test centers, and contractor(s) facilities. **(T-1)**

4.5.6.3.3. Referencing the DAF *Independent Technical Assessment Guidebook* for comprehensive guidance.

4.5.7. Product Support Risk Management. The PM, with support from the PSM, has execution responsibility for product support risk management and utilizes applicable logistics assessment tools throughout the life cycle of the program to manage product support risks. See **Chapter 7** for required product support and logistics assessments.

4.5.8. Information Technology (IT) Risk Management. The Risk Management Framework for DoD IT defines the process to determine and manage the residual cybersecurity risk to the DAF created by the vulnerabilities and threats associated with objectives in military, intelligence, and business operations. Reference AFI 17-101 for additional information.

4.5.8.1. DoD IT includes DoD information systems, platform IT, IT services, and products. This includes IT supporting RDT&E, and DoD-funded or controlled IT operated by a contractor or other entity on behalf of the DoD.

4.5.8.2. The PM ensures all systems with IT implement risk management procedures aligned with the Risk Management Framework throughout all phases of the life cycle in accordance with DoDI 8500.01, *Cybersecurity*; DoDI 8510.01, DoDI 5000.90, AFPD 17-1, *Information Dominance Governance and Management*; AFPD 14-4, *Management of the AF ISR and Cyber Effects Operations Enterprise* ; AFI 17-101 and AFMAN 14-403, *Sensitive Compartmented Information Security and Intelligence, Surveillance, and Reconnaissance Systems Cybersecurity and Governance*. **(T-0)**

4.5.8.3. The PM coordinates risk management framework results with the AO throughout all phases of the life cycle. **(T-0)**

4.5.8.4. The PM provides required cybersecurity documentation to and obtains authorization from the AO before the system under development is operated or connected to any internal or external network. **(T-0)**

4.5.8.5. For all DAF SCI assets and data, ISR mission assets and data (regardless of classification), and Guest SCI/ISR assets and data, risk management framework is implemented under Intelligence Community Directive 503 and AFMAN 14-403. **(T-0)**

4.5.8.6. For all DAF SAP assets and data, risk management framework is implemented under AFI 17-101 and supplemental policies for the SAP community.

4.5.9. Test and Evaluation Risk Management. The PM has execution responsibility for T&E risk management and utilizes both system engineering and T&E processes throughout the life cycle to manage program risks. T&E risk management considers test resources, test schedule, certifications, and technical risks (to include the PM's safety release and test-related environmental impact analyses and mitigations) from a T&E perspective. Refer to DoDI 5000.89_DAFI 99-103 for more information on T&E processes.

4.5.10. Risk Management for O&M. The PM assists the system operators and maintainers in the application of risk management by providing the assessment of hazards and potential handling and mitigation measures. Assistance could also include the environmental characteristics of the system (air pollutants, noise profile, etc.) needed for environmental impact analysis._ Refer to AFI 90-802, *Risk Management*, for more information.

4.5.11. Threat Risk Management. The PM consolidates threat assessments and projections, including those for CIPs, related to the operational environment throughout the life cycle of the program. The PM evaluates impacts using programmatic risk management processes to include threats into program risk decisions.

4.5.12. The Intelligence Health Assessment (IHA) and Intelligence Risk Management. IHAs consider a program's intelligence supportability and threat status. IHA factors will be evaluated and incorporated into a program's overall risk. Intelligence dependent programs work with Acquisitions Intelligence Analysts to conduct IHAs, and brief risks internally at PMRs. The PM will endorse and evaluate the IHAs every 24 months and store on SIPRnet at **https://intelshare.intelink.sgov.gov/sites/aicwg/SitePages/Home.aspx**#. **(T-2)**

4.5.13. Acquisition Security Risk Management. The PM ensures acquisition security risks are included in in all phases of life cycle of the program. Acquisition security risk assessments consider the system's intended operational environment when determining vulnerabilities emanating from and provided to system interfaces.

4.5.14. Human System Integration (HSI) Risk Management. The PM ensures that risks associated with the HSI domains (human factors engineering, personnel, habitability, manpower, training, safety and occupational health, and force protection and survivability) are addressed throughout the life cycle.

**4.6. Small Business Integrated Life Cycle Management Activities.** The PM in conjunction with the PCO ensures that small business is an integral part of the life cycle from early acquisition through system demilitarization and disposal to help meet small business goals set by the PEO. Early considerations to provide maximum practicable opportunities for small business include pre-acquisition market research and requirements definition categorization planning, principally in support of the MDD and Analysis of Alternatives, to ensure approval authorities are offered trade space for portfolio and risk management. See AFI 90-1801, *Small Business Programs*, for more information.

**4.7. Intellectual Property (IP).** The PM will solicit the opinions of the SAF/AQCC IP Cadre, USSF/CTIO (for USSF acquisitions), and legal counsel when drafting the Acquisition Strategy and the RFP/RPP/CSO, before contract award, and during contract administration with respect to IP matters.

4.7.1. IP Strategy in the Acquisition Strategy. During Acquisition Strategy development, the PM will assess IP and develop an IP Strategy that will be included in the Acquisition Strategy. **(T-0)** The IP strategy identifies the IP needed to accomplish the program’s product support strategy to maintain competition throughout the life cycle and respond to the program’s intelligence threat characterization and supportability considerations. The PM reviews the government requirement for IP throughout the life cycle of the system. Reference DoDI 5010.44, *Intellectual Property (IP) Acquisition and Licensing* for more on the IP strategy. The IP Strategy will identify:

4.7.1.1. IP deliverable content requirements (Contract Data Requirements Lists (CDRLs)) and their estimated cost. Such deliverables will include, but not be limited to:

4.7.1.1.1. Technical baseline documentation for all Hardware Configuration Items and Computer Software Configuration Items residing within the system identified in the Work Breakdown Structure (WBS) and, if appropriate, the Government Reference Architecture (GRA) and contractor Weapon System Architecture Model (WSAM) (digital model) (i.e., system architecture). This documentation will include all deliverables needed to implement a Modular Open System Approach (MOSA) (e.g., modular system interfaces) for all modular systems and major system interfaces identified in the Work Breakdown Structure (WBS) and, if appropriate, the Government Reference Architecture (GRA) and contractor Weapon System Architecture Model (WSAM) (digital model). (**T-1)**

4.7.1.1.2. IP required to support:

4.7.1.1.2.1. Organic source of repair and supply decisions.

4.7.1.1.2.2. Government Core depot maintenance capability requirements. Indicate the extent to which the program has solicited input from government software providers (e.g., the 309th Software Engineering Group (SWEG)) to determine what software-related IP deliverables they would need to perform software maintenance.

4.7.1.1.2.3. Expeditionary logistics footprint requirements.

4.7.1.1.2.4. Engineering data requirements needed for life cycle activities such as integrity programs, sustaining engineering, reliability management, airworthiness assessments, and configuration management.

4.7.1.1.2.5. Technical Orders (TOs).

4.7.1.1.2.6. Re-procurement, modification, or upgrade.

4.7.1.1.2.7. Demilitarization and disposal.

4.7.1.1.2.8. Cybersecurity strategies.

4.7.1.1.2.9. Technology refreshment or enhancement.

4.7.1.1.2.10. Training and training program information.

4.7.1.1.2.11. Spare parts procurement.

4.7.1.1.2.12. Testing and Evaluation.

4.7.1.1.2.13. Mission data production and intelligence data sufficiency analysis.

4.7.1.1.2.14. Competitive contractor logistics support (CLS).

4.7.1.1.2.15. Supply chain management.

4.7.1.1.2.16. Depot level reparable and consumables procurement.

4.7.1.1.2.17. Support equipment procurement and maintenance.

4.7.1.1.2.18. Special tools and tooling.

4.7.1.1.2.19. Diminishing manufacturing sources & material shortages (DMSMS).

4.7.1.1.3. If not acquiring technical data, computer software, or associated IP rights for organic support, a summary of the business case analysis justifying the decision will be included in the MDA approved Acquisition Strategy. **(T-1)**

4.7.1.2. IP license rights and their estimated cost. The IP strategy will include a description of the IP licenses that will define the scope of the rights the program needs to the IP deliverables to be acquired. This description will include the purpose for which the IP content will be used, with whom the Government needs to share it, and for how long the Government needs to share it. Include a description of the specially negotiated licenses the program seeks to acquire that will govern the use, release, or disclosure of contract administration information (e.g., Earned Value Management (EVM), Integrated Program Management Data and Analysis Report (IPMDAR)), as DFARS does not prescribe a standard license for such IP. **(T-0)**

4.7.1.3. The minimum required level of system and software modularity (MOSA) needed to accomplish product support and intelligence threat characterization objectives. **(T-0)**

4.7.1.4. To the maximum practicable extent, source selection evaluation criteria that will evaluate the degree to which offerors propose to deliver, furnish, or otherwise provide, all IP content and IP licenses required by the request for proposals, and what level of system/software modularity they propose to deliver across all relevant evaluation factors (Technical, Past Performance, Cost/Price). **(T-0)**

4.7.1.5. The degree to which performance-based payments, award fees, or incentive payments will be tied to verified contractor compliance with applicable IP deliverable, IP licenses, and system/software modularity requirements. **(T-1)**

4.7.2. IP in Requests for Proposals (RFP)/Requests for Prototype Proposals (RPP)/Commercial Solutions Openings (CSO). Consistent with the program's Acquisition Strategy and SEP, the RFP/RPP/CSO will identify:

4.7.2.1. IP deliverables: All those specified in **paragraphs 4.7.1.1**. **(T-0)**

4.7.2.2. IP licenses: All those specified in **paragraph 4.7.1.2**. To the maximum practicable extent, the RFP/RPP/CSO will baseline the level of IP rights the offeror will grant to the IP content it will deliver under a particular CDRL to a single level per CDRL. **(T-1)**

4.7.2.3. The minimum required level of system and software modularity (MOSA) needed to accomplish product support and intelligence threat characterization objectives. **(T-0)**

4.7.2.4. To the maximum practicable extent, source selection evaluation criteria that will evaluate the degree to which offerors propose to deliver, furnish, or otherwise provide, all IP content and IP licenses required by the request for proposals and what level of system/software modularity they propose to deliver across all relevant evaluation factors (Technical, Past Performance, Cost/Price). **(T-0)**

4.7.2.5. The degree to which performance-based payments, award fees, or incentive payments will be tied to verified contractor compliance with applicable IP deliverable, IP licenses, and system/software modularity requirements. **(T-1)**

4.7.2.6. If appropriate, IP pricing options that correspond to the recommended IP rights in the Acquisition Strategy. **(T-0)**

4.7.3. IP in Contracts/Other transaction agreements (OTA). Contracts and OTAs will be structured as follows:

4.7.3.1. Users will be able to quickly identify what price the Government agreed to pay the contractor to acquire the IP license (commercial, noncommercial) the contractor granted to the Government that will govern the use, release, or disclosure of each IP deliverable (Contract Data Requirements Lists (CDRLs)) the contractor will deliver, furnish, or otherwise provide during contract performance that, if applicable, describes or will be the technical baseline for all Hardware Configuration Items (HWCI) and Computer Software Configuration Items (CSCI) residing at the appropriate level of indenture of the WBS, the GRA, and the WSAM needed to accomplish the program's product support strategy to maintain competition throughout the life cycle and respond to the program's intelligence threat characterization/supportability considerations. In other words, contracts and OTAs will "map" the pricing to the IP license to the IP deliverable to, if applicable, the HWCI/CSCI reflected in the WBS to the GRA to the WSAM (digital model) (i.e., system architecture). The PM will ensure that adequate due diligence is performed prior to award to ensure that IP content to be delivered to the DAF/USSF is properly classified as a commercial product/service, and that contracts/OTAs clearly differentiate between noncommercial IP and commercial IP content delivered to the DAF/USSF (and IP licenses that govern the use, release, and disclosure of that IP).

4.7.3.2. The PM will identify the minimum required level of system and software modularity (MOSA) needed to accomplish product support and intelligence threat characterization objectives. **(T-0)**

4.7.3.3. To the maximum practicable extent, they will tie performance-based payments, award fees, or incentive payments to verified contractor compliance with applicable IP deliverable, IP licenses, and system/software modularity requirements. **(T-1)**

4.7.4. IP During Contract/OTA Administration.

4.7.4.1. The PM will implement measures sufficient to ensure that IP deliverables are reviewed for accuracy and completeness in a timely manner. Reviews will include a determination regarding whether the restrictive markings affixed to deliverables are conforming and justified. **(T-1)**

4.7.4.2. If IP deliverable content or restrictive markings affixed to that content do not comply with contract requirements, the PM will promptly notify the contracting/agreements officer to determine what remedies the DAF should implement. **(T-1)** Such remedies include, but are not limited to, issuing pre-challenge requests for information and formal challenges, issuing contracting officer final decisions, withholding payment, withholding acceptance, adverse past performance evaluations (Contractor Performance Assessment Reporting System (CPARS)), partial termination for default, suspension, and debarment. **(T-1)**

4.7.5. Maintain updated digital product design data in the standardized system throughout operation and sustainment.

4.7.6. Document in the IP strategy the rationale for deviations (if any) from the above IP requirements.

4.7.6.1. The PM will ensure that the Acquisition Strategy, resulting RFP/RPP/CSO, and resulting contract(s)/agreements include, to the maximum extent practicable, negotiation for, and periodic delivery of, all technical data, computer software, and computer software documentation specified in DoDI 5000.87_DAFI 63-150. When an offeror or contractor is unwilling to provide source code as a deliverable, the PM should consider the impact on the program's Acquisition Strategy (i.e., product support strategy, intelligence threat inputs/supportability considerations). **(T-0)** In assessing program impact and developing recommended COAs for MDA decision and approval, the PM should consult with the program legal team, contracting/agreements officer, SAF/AQC IP Cadre, and other supporting organizations to develop a thorough understanding of impacts.

4.7.6.2. The PM provides the contracting/agreements officer with the IP software-related content requirements (CDRLs) and associated tasking statements (SOW/PWS) for inclusion into the RFP/RPP/CSO, which identify the hardware, software and other resources needed for life cycle support of deliverable software and describe the developer's plans for transitioning deliverable items necessary for software sustainment to the DAF.

4.7.6.3. The IP strategy addresses the potential for changes in computer software sustainment over the life cycle of the system or subsystem. RFPs/RPPs/CSOs and contracts/OTAs should contain deferred ordering provisions, when a firm requirement for a particular computer software item(s) has not been established prior to contract award but there is a potential need (e.g., organic sustainment) for the IP.

4.7.7. Life Cycle Management of Digital Product Design Data. The PM generates digital product design data or requires delivery of contractor-generated digital product design data as part of the program's IP strategy. The PM is responsible for:

4.7.7.1. Leveraging the technical expertise of the Engineering Data Management Offices within the centers to ensure government (e.g. MIL-STD-31000B, Technical Data Packages) and non-government standards (e.g., ASME Y14.47, Model Organization Practices) are effectively invoked in CDRL deliverables for legacy technical data packages (DI-SESS-80776B) and digital models (DI-SESS-82364).

4.7.7.2. Providing digital models to a DoD standardized product data management system for common government storage, maintenance, access, and control. If a prime contractor central repository is used instead of a DAF maintained and controlled facility, appropriate data access and retrieval rights for government personnel must be ensured through specified inclusion in the contract consistent with DAFPAM63-128. The PM manages digital product design data using a DoD standardized product data management system that must be defined and justified within the SEP and approved by the MDA. The PM should coordinate Product Data Management strategies with the AFLCMC Product Lifecycle Management Capability Support Office (AF PLM CSO **AF-PLM-CSO@us.af.mil**) prior to selection of a Product Lifecycle Management system.

4.7.7.3. Maintaining updated digital product design data in the standardized system throughout operation and sustainment.

4.7.7.4. Documenting in the IP strategy the rationale for deviations (if any) from the above IP requirements.

4.7.7.5. If reporting to the USSF, ensuring that all IP developed under a contract/OTA awarded by the USSF is delivered to and retained by the USSF. All USSF databases and data systems at all classification levels will have entries in the USSF Data Catalog and Data System Catalog. Data deposited into those databases include all data (at rest or in motion, raw and processed/fused). Entries will be maintained with a minimum six-month update interval. The USSF PM will provide data dictionaries for each USSF database to USSF/CTIO or designee, who in turn oversees its integration into the USSF Data Dictionary. (The Data Dictionary provides data clarity for analysts, developers, and operators and serves as a tool for data model standardization, which is a prerequisite for development of any advanced battle management system for joint forces use.) The USSF PM will provide USSF/CTIO (Chief Technology and Innovation Officer) or their designee, design documentation for all new or modernized USSF data systems in the form of tabular data flows and data dictionaries prior to submission for operational acceptance. The USSF PM will also record all new databases in the USSF Data Catalog.

**4.8. Test Planning.** The PM ensures the Chief Developmental Tester or Test Manager establishes an Integrated Test Team after program initiation, develops and documents test planning and the level of test support required for the life cycle of the system, and conducts readiness reviews in accordance with DoDI 5000.89_DAFI 99-103 and DAFMAN 63-119, *Mission-Oriented Test Readiness Certification*. The PM should be aware of T&E planning requirements and make provisions within contracts, reference OSD's guide on *Incorporating Test and Evaluation into Department of Defense Acquisition Contracts* for more information.

4.8.1. Test and Evaluation Master Plan (TEMP) and Test Strategy. The PM ensures the Chief Developmental Tester or Test Manager, and the Integrated Test Team prepares a TEMP prior to a milestone decision or the test strategy prior to the decision point to enter the applicable acquisition pathway in accordance with DoDI 5000.89_DAFI 99-103. The Integrated Test Team forwards the final draft TEMP test strategy to the PM and the Chief Engineer for review and for approval by the PM and assists with subsequent coordination to all required organizations below the HAF level.

4.8.1.1. For ACAT I programs and those programs on the T&E oversight list, the PEO will sign the TEMP or test strategy after the PM signs and send back to the PM for DAF staffing. The PM will send the TEMP or test strategy to the SAF/AQ or SAF/SQ Program Element Monitor (PEM) who will coordinate through the required DAF Staff offices.

4.8.1.2. For USSF programs, the TEMP or test strategy will be coordinated through USSF/TE and signed by USSF/TE and AF/TE prior to coordination with SAE. After SAE signature, the PEM will submit the TEMP or test strategy to the Deputy Director for Developmental Test, Evaluation, and Assessments (DD(DTE&A)) and DOT&E for approval.

4.8.1.3. The MDA is the TEMP approval authority for delegated ACAT II, ACAT III and equivalent programs not on OSD T&E oversight.

4.8.2. Live Fire Test and Evaluation (LFT&E). SAE recommends candidate systems to DOT&E for compliance with LFT&E legislation. PMs with a "covered system," as defined in 10 USC Section 4172, *Major Systems and Munitions Programs: Survivability Testing and Lethality Testing Required Before Full-Scale Production*, will contact Office of the Secretary of Defense, Director Operational Test and Evaluation (OSD/DOT&E) LFT&E office to determine live fire applicability. **(T-0) SAE** approves agreed-upon LFT&E programs and allocates DAF resources required to accomplish LFT&E plans. Additionally, the SAE forwards required LFT&E documentation and waivers (if appropriate) to OSD/DOT&E, which then go to USD(A&S) for approval.

4.8.3. Test and Evaluation Considerations. The PM ensures that DT&E and Operational Test and Evaluation (OT&E) considerations are addressed throughout the life cycle. PMs, with the Chief Developmental Tester/Test Manager, establish a structured strategy for T&E and a process to provide early feedback to the requirements and acquisition processes. The PM implements the dedicated operational test review process as described in DAFMAN 63-119 and briefs the MDA who certifies system readiness for Initial OT&E. DoDI 5000.89_DAFI 99-103 for more information.

**4.9. Modeling and Simulation.** To satisfy the DAF requirements to support the DoD mission engineering efforts to increase lethality through interoperability and the requirements in AFI 16-1005, *Modeling & Simulation Management*, **Chapter 7**, *Modeling & Simulation Standards and Architecture*, Program Offices are designated as the single authoritative source of truth for their systems' models for use in all appropriate modeling environments.

4.9.1. The PM ensures models, simulations, and associated data supporting acquisition processes, products, and decisions meet the appropriate verification and validation requirements and are accredited for their intended use (reference AFI 16-1001, *Verification, Validation and Accreditation (VV&A)*). The infrastructure necessary to support system design and integration includes government-owned centers for live, virtual, and constructive simulation, as well as contractor system integration facilities. To the maximum extent possible, the PM leverages existing live, virtual, and constructive assets.

4.9.2. The PM works with lead or using command, operational requirements advocate(s), developmental and operational testers, the IC, the science and technology community and other relevant organizations to develop and implement a modeling and simulation strategy leading to products that can be transitioned and used throughout the acquisition life cycle.

4.9.2.1. The PM documents the modeling and simulation strategy in the appropriate program documentation dependent upon the usage of modeling and simulation. The PM provides, or makes available, the program's systems models to support Modeling & Simulation capabilities. The system model(s) should support Modeling & Simulation requirements including, but not limited to, live, synthetic, and blended operational training and T&E requirements supporting the Operational Training and Test Infrastructure.

4.9.2.2. The modeling and simulation strategy describes how the use of modeling and simulation benefits the program and addresses how the program meets DoD and DAF modeling and simulation mandates such as reusability, commonality, interoperability, adoption of standards, and promoting visibility of capabilities, resources, and data.

4.9.2.3. The modeling and simulation strategy should describe how the PM is to obtain sufficient data to adequately characterize the technical and operational capabilities of the system. The strategy should allow for model requirements decomposition, test design and scenarios negotiation, prioritization, criticality, and awareness of availability or required delivery date, especially for necessary threat models and data.

4.9.2.4. Programs should obtain data and models from authoritative sources when available and feasible. If intelligence authoritative sources are neither available nor feasible, the program must address how it will ensure Intelligence Community analytic standards are followed in accordance with Intelligence Community Directive 203 "Analytic Standards" for generation of the threat models and threat data it will use.

4.9.3. PMs should consult their local organic modeling and simulation agencies (e.g., Simulation and Analysis Facility within AFMC, Air Force Research Laboratory (AFRL) Enterprise Modeling & Simulation) and non-organic organizations (National Air and Space Intelligence Center for threat modeling and simulation, the AF Agency for Modeling and Simulation, and the DAF Chief Modeling and Simulation Office) that can be utilized by the program instead of developing unique modeling and simulation tools.

**4.10. Government Cost Estimates.** The PM is responsible for updating life cycle cost estimates in accordance with AFPD 65-5; AFMAN 65-502, *Inflation*; AFI 65-508; and AFMAN 65-506, *Economic Analysis*. The PM compares cost estimates to the program budget to assess program executability. The PM ensures current technical and programmatic data is provided to Cost Estimators in support of life cycle cost estimates. See DoD 7000.14-R, Vol. 2A, *Budget Formulation and Presentation* for more details. **Note**: PM responses to external inquiries should use official cost estimates; consult AFI 65-508.

4.10.1. The PM provides cost estimates at the identified confidence level to the MDA during reviews. To the greatest extent possible, the PM identifies the Total Ownership Cost and the major drivers to this cost. Realistic program planning assumptions should be developed to ensure adequate analysis of life cycle cost, schedule, and performance risks, to be documented in the program office estimate.

4.10.2. For cost estimates that provide a range of potential costs, the PM should assess that range for the associated risks to the program. Establish each cost estimate and associated risk assessment using approved DAF cost estimating procedures and consider technical, schedule, and programmatic risk assessments to produce a cost estimate distribution or, where a distribution cannot be computed, a range of potential program costs. The MDA for an ACAT I or II program uses the cost estimate distribution and cost estimate confidence to establish a sufficient program funding level. The selection of the appropriate program cost estimate confidence level is at the discretion of the MDA, however, in accordance with AFI 65-508, the PM establishes a confidence level and documents it in the ADM and other deliverables as necessary.

**4.11. Program Funding.** Authority is delegated to SAF/SQX to direct the implementation of space systems and programs in the RDT&E; Space; and Other Procurement appropriations. (Reference DAFMAN 65-601, Vol. 1, *Budget Guidance and Technical Procedures*).

4.11.1. PEO Chief Financial Officers (CFOs) submit requests for budget authorization adjustments to SAF/AQX or SAF/SQX when authorizations are inconsistent with program requirements, or when necessary to meet critical requirements. SAF/AQX or SAF/SQX authorizes, via coordination of program adjustments in Automated Funds Management System, execution-year adjustments to program funding, to include release/withdrawal of funds.

4.11.2. SAF/AQX or SAF/SQX coordinates on all investment New Start, Below Threshold Reprogramming, and Above Threshold Reprogramming actions, prior to submittal to SAF/FMB.

4.11.3. Budgeting and funding for all acquisition programs will account for all IP deliverables and associated IP licenses needed for the program’s life cycle. Those resources will be sufficient to specify, identify, develop, and sustain the modular open system approach, associated technical baseline documentation, systems integration, and any additional program activities necessary to sustain innovation and interoperability.

**4.12. New Start Notification.** A New Start notification is required for any program, subprogram, modification, project, or subproject not previously justified to and funded by Congress in an appropriation through the normal budget process. Program office personnel should review past funding to support New Start determination and contact SAF/AQX or SAF/SQX for New Start determination questions. SAF/AQX or SAF/SQX, in coordination with FMB, will review the program's Congressional Justification Documents and past funding and will make an official determination. When a determination has been made that the efforts undertaken meet the New Start criteria, Congress is notified via either a Letter of Notification or DD Form 1415-1, *Reprogramming Action (Prior Approval Action)*. The methods of notification to be used are delineated in DoD 7000.14-R, Vol. 3, *Budget Execution – Availability and Use of Budgetary Resources,* Chapter 6. Additional guidance on New Start business rules can be provided by SAF/FMBI.

4.12.1. New Start Validation Responsibilities. The PM and the respective program office CFO are required to document and validate that efforts underway have obtained approval for New Start or have been adequately assessed and determined not to meet the New Start criteria before any funds are obligated for programs not categorized as "commodity" programs. RFPs, proposal evaluations, and contract negotiations are part of normal program office activities and therefore, do not represent New Start activities. The New Start Validation Form contains the criteria is provided as an Attachment o DAFPAM 63-128.

4.12.1.1. Refer to DoD 7000.14-R, Vol. 3, Ch. 6 for additional guidance on the key points delineated in the Validation Form in DAFPAM 63-128.

4.12.1.2. If no item in the Validation Form is marked "YES," the PM works with the respective Program Element Monitor or Capability Director at the HAF to coordinate the initiation of the appropriate New Start Notification package (i.e., Letter of Notification/DD Form 1415-1 packages). Once the Validation Form is completed, file it as part of the program's contract file.

4.12.2. Validation Form Exemptions. Funding actions for the following are excluded from the requirement to complete the validation form prior to obligating funds. The exemption from completing the validation form does not absolve activities from complying with all regulations pertaining to New Start Notifications in the event a New Start is planned for initiation.

4.12.2.1. Budget Activities. All Basic Research (code 6.1 activities), Applied Research (code 6.2 activities), and Advanced Technology Development (code 6.3 activities), unless initiating a new research project (budget program activity code) that is not a transfer of an existing effort nor listed in the applicable descriptive summary (RDT&E programs budget item justification exhibit, "Exhibit R-2"). These exemptions do not include program elements beginning with a 63 designation but do include those falling under another Budget Activity Development and Prototypes budget program activity code.

4.12.2.2. All Small Business Innovation Research Phase I and II efforts. See AFI 61-102 for more information.

4.12.2.3. Incremental funding actions for ongoing efforts if no change in required work.

4.12.2.4. Contract changes pursuant to clauses that do not change the work requirement of the contract (i.e., award fees and some price adjustments).

4.12.2.5. Program management and administrative efforts directed at business management and program office operations.

4.12.2.6. O&M funded efforts.

4.12.3. Reference DAFMAN 65-605, V1 for details on the New Start Notification process, procedures, and reporting requirements. In addition, individuals can contact SAF/AQXE or SAF/SQXE, as applicable, and SAF/FMBI for additional guidance or help regarding New Starts specific issues.

**4.13. Use of Specifications and Standards.** Consistent with the DoDI 4120.24, *Defense Standardization Program (DSP)*, and the AF Standardization Program (refer to AFI 60-101, *Materiel Standardization*), balance decisions to standardize against specific mission requirements, technology growth, and cost effectiveness. Use specifications and standards in solicitations and contracts to define essential standard practices (e.g., system safety and parts management) and technical requirements (e.g., materiel interoperability and support requirements) and to manage risk. In support of this, the office of the AF Standardization Executive has developed portfolio-specific standardization document lists (PEO Picklists) that can be used (see **https://www.milsuite.mil/wiki/Portal:Air_Force_Engineering_Resource_Center/Standardization_Program**). Specific DoD policy on the use of specifications and standards and other methods to achieve objectives required by 10 USC Section 2451, *Defense Supply Management*, to 10 USC Section 2457, *Standardization of equipment with North Atlantic Treaty Organization Members*; DoDI 2010.06, *Materiel Interoperability and Standardization with Allies and Coalition Partners* and DoDD 5000.01 are contained in DoDM 4120.24, *DoD Standardization Program (DSP) Procedures*. Additional guidance on the use of specifications and standards in architecting is contained in AFI 17-140, *Architecting*.

**4.14. Intelligence Supportability Analysis.** Initial or macro intelligence supportability risk is first determined by an Intelligence sensitivity determination. Intelligence sensitivity of a program is determined by the program's Acquisition Intelligence Analyst, in conjunction with the PM and other stakeholders. Informed by the relative degree of Intelligence-Sensitivity, the PM develops, and documents requirements and level of intelligence support required for the life cycle of the intelligence-sensitive program. The PM uses the results of Intelligence Supportability Analysis to develop and document requirements for; ISR and data dependencies, the level of intelligence support necessary across the program life cycle, and the integration of intelligence information into the program decision making and system engineering. Intelligence supportability analysis may also illuminate where there are needs for involvement of any applicable FMS stakeholders. Reference JCIDS Manual for more information on intelligence supportability. **Note**: Per applicability paragraph of this publication, SAPs are coordinated with SAF/AQL or SAF/SQX.

4.14.1. The PM may decide to tailor-in regulatory artifacts, Life-Cycle Mission Data Plan, validated on-line threat, and Technology Targeting Risk Assessment pending the Acquisition Intelligence Analyst recommendation for the best way to address program data dependencies, relevant authoritative threat and technology targeting assessments. This decision for how regulatory artifacts will be addressed should be documented within the Acquisition Strategy. **(T-0)**

4.14.2. Intelligence threat model and any new types of technical intelligence data requirements are to be documented and submitted for intelligence community action in accordance with CJCSI 3318.01, *Acquisition-Intelligence-Requirements Annual Priorities and Risk Management Framework* and using the Acquisition Intelligence Requirements and Risk Management Framework (PRMF) process. **(T-0)**

4.14.2.1. The National Geospatial Intelligence Agency (NGA) produces a National System for Geospatial Intelligence Foundation GEOINT Intelligence Mission Data Plan (NSG FG IMDP) that can inform a program of NGA plans for GEOINT data. The NSG FG IMDP can be found at **https://intellipedia.intelink.gov/wiki/Foundation_GEOINT_IMD_Plan**

4.14.2.2. Acquisition intelligence analyst in coordination with the PM will notify AF/A2/6, USSF/S2, and DAF Chief Modeling Simulation Office for threat model and intelligence data production requirements when submitted through Community On-Line Intelligence System for End-Users and Managers in addition to or outside of the Priorities and Risk Management Framework. **(T-2)**

4.14.3. Critical Intelligence Parameter Processes. Critical Intelligence Parameters (CIPs) are factors defining the threshold performance of a foreign system or capability that could compromise the program or mission effectiveness of the U.S. system. As such, CIPs define areas of highest priority for ongoing intelligence reporting that ensures program achievement of Key Performance Parameters and/or Key System Attributes. Formal requirements for intelligence production of CIP forecasts should be established by the PM and the program requirements sponsor in collaboration with the Acquisition Intelligence Analysts. CIPs typically originate during the requirements generation phase and may evolve based upon program maturation across the acquisition life cycle.

4.14.3.1. CIP Breach. If a CIP is breached at any point in the program's life cycle, all materiel and non-materiel (i.e., Doctrine, Organization, Training, Leadership and Education, Personnel, Facilities, or Policy) impacts are reviewed to determine appropriate responses and risk mitigation efforts. The program will likely require additional time and funds to adjust (i.e., "re-baseline"), and spiral or increment thresholds, objectives, Key Performance Parameters (KPPs), Key System Attributes (KSAs), etc., may require adjustment or modification.

4.14.3.2. The PM notifies the PEO, MDA, and implementing command's intelligence focal point if a CIP threshold is reported as breached by the appropriate supporting Service Intelligence Center (e.g., National Air and Space Intelligence Center). A Configuration Steering Board, as detailed in **Chapter 3**, determines if any follow-on action is required. For additional information reference DIAI 5000.002, *Intelligence Threat Support for Major Defense Acquisition Programs* and CJCSI 5123.01I.

4.14.3.3. The PM should ensure the specific intelligence mission data products' version, format, and method of being ingested is documented in the appropriate Systems Engineering and Logistics baselines to facilitate traceability in the event the intelligence mission data product is modified or replaced.

4.14.4. The PM, working with the Acquisition Intelligence Analyst, defines the program's threat intelligence needs in accordance with the appropriate acquisition pathway and that pathway's regulatory guidance, and will document a plan to meet intelligence needs in the Acquisition Strategy, unless waived by the MDA. With assistance of the Acquisition Intelligence Analyst, the PM ensures programs are fully threat-informed with authoritative intelligence (in accordance with ICD 501, *Discovery, and Dissemination or Retrieval of Information Within the Intelligence Community*).

4.14.5. If program is intelligence mission data-dependent, collaborate with the intelligence focal point and operational MAJCOM/FLDCOM to identify intelligence mission data production requirements to be submitted in the DAF annual intelligence mission data requirements process. Notify AF/A2/6 and SF/S2 for intelligence mission data production requirements ad-hoc submission in addition to submission through Community On-Line Intelligence System for End-Users and Managers.

4.14.6. Intelligence Certification. CJCSI 5123.01I and the JCIDS Manual directs J283 to conduct formal Intelligence Certification for capability requirement documents designated as JROC or Joint Capabilities Board Interest. Reference JCIDS Manual and DAFMAN 14-405 for details. PMs should be aware of risk related to the threat summary and to each of the nine intelligence support categories. For programs not designated as JROC or Joint Capabilities Board Interest, AF/A2/6 or USSF/S2 exercises DoD Component level intelligence certification authority through the USAF Requirements Oversight Council process.

**4.15. Arms Control Compliance.** The PM ensures all activities within the acquisition life cycle are compliant with all U.S. Government arms control obligations in accordance with AFI 16-601, *Implementation of, and Compliance With, International Arms Control and Nonproliferation Agreements* and AFI 16-608, *Implementation of, and Compliance with, Treaties Involving Weapons of Mass Destruction*. This assessment occurs prior to all milestone reviews or when concerns arise, whichever is earlier.

4.15.1. If necessary, the PM submits relevant Arms Control Compliance documents for their programs and activities, prior to program review milestones and when required throughout the program's life cycle, to the Planning, Policy, and Strategy Division (AF/A10P), or an AF/A10P-designated organization.

4.15.2. The PM ensures the program is reviewed for arms control compliance, to include New START Treaty compliance, and obtains confirmation of review via normal staffing from AF/A10 for program review milestones.

4.15.3. A PM who oversees acquisition programs involving strategic weapons (e.g., bombs, warheads), their delivery vehicles (e.g., ballistic missiles, bombers, and cruise missiles, including their associated basing, testing, and launch and control facilities), or chemical and biological weapon defense-related materials and equipment should become aware of the implications and limitations that arms control treaties may have on or impact their program(s).

**4.16. Procurement Fraud.** The PM immediately notifies the AF Office of Special Investigations, Deputy General Counsel for Contractor Responsibility (SAF/GCR) and local legal office, Contracting Officer (if appropriate), and AF/JACQ, the Acquisition, Fiscal Law and Litigation Division of any actual or suspected procurement fraud. Reference AFI 51-1101, *Acquisition Integrity Program* for more information.

**4.17. Missile Defense Agency Related Acquisition.** Life cycle management support is provided to the Director, Missile Defense Agency, as needed, to carry out the responsibilities and functions assigned to the Missile Defense Agency in accordance with DoDD 5134.09, *Missile Defense Agency*. Where the DAF and the Missile Defense Agency have agreed through a weapon-specific memorandum of understanding that the DAF is responsible for the life cycle management of an element of the ballistic missile defense system in accordance with the Deputy Secretary of Defense guidance on Ballistic Missile Defense System funding responsibility, the DAF then follows the DoD 5000-series publications and this instruction.

**4.18. Nuclear Weapon Related Policy.** DAF nuclear weapon related acquisitions are developed in accordance with DoDD 5000.01, DoDI 5000.02, and DoDI 5000.85. DAF nuclear certification on nuclear weapon systems is considered as early as possible in the acquisition process to ensure compliance with the four DoD nuclear surety standards per DoDD 3150.02, *DoD Nuclear Weapons Surety Program*.

4.18.1. Nuclear Certification. The PM ensures nuclear weapon systems obtain nuclear certification according to AFI 63-125, *Nuclear Certification Program*. For new systems, the PM engages the nuclear certification process during the requirements analysis process to ensure nuclear surety requirements are factored into the design as early as possible. Nuclear certification requirements and key activities (including design considerations, testing, verification, and reviews) should be considered in the program baseline, schedule, and risk assessments. The certification review activities and supporting documentation should be aligned to the program technical reviews (as identified in **Chapter 5**) to the greatest extent possible, to reduce burden and avoid duplication of effort.

4.18.2. Joint AF-National Nuclear Security Administration developed nuclear weapons also need to comply with DoDD 3150.01, *Joint DoD-Department of Energy/National Nuclear Security Administration (DoD-DOE/NNSA) Nuclear Weapon Life Cycle Activities*; DoDI 3150.09, *The Chemical, Biological, Radiological, and Nuclear (CBRN) Survivability Policy*; DoDM 5030.55_AFMAN 63-103, *DoD Procedures For Joint DoD-Department Of Energy/National Nuclear Security Administration (DOE/NNSA) Nuclear Weapon Life-Cycle Activities.* **(T-0)**

4.18.3. Additional DAF nuclear weapon related policy may be found in AFI 16-601; AFI 20-110, *Nuclear Weapons-Related Materiel Management*; AFMAN 21-204, *Nuclear Weapons Maintenance*; AFI 63-125; DAFI 91-101, *Air Force Nuclear Weapons Surety Program*; DoDI 5000.89_DAFI 99-103, *Capabilities-Based Test and Evaluation*; MIL-STD-1822, *Nuclear Compatibility Certification of Nuclear Weapon Systems, Subsystems, and Support Equipment; and* DAFMAN 91-110, *Nuclear Safety Review and Launch Approval for Space or Missile Use of Radioactive Material and Nuclear Systems*.

4.18.4. Nuclear Weapon Related Materiel. The PM ensures parts are evaluated against nuclear weapon Related Materiel criteria in AFI 20-110. If assets are deemed Nuclear Weapon Related Materiel, the PM implements applicable actions in compliance with AFI 20-110.

**4.19. Management of DAF Training Systems.** Refer to AFI 16-1007, *Management of Air Force Operational Training Systems*, for specific requirements and responsibilities associated with the life cycle of operational training systems, including aircrew, missile. mission systems, cyberspace, and space system training systems, and training services attendant to DAF systems. Lead commands may request PM participation in Training Planning Teams activities including accomplishing the Training System Requirements Analysis and the development of system training plans. Training systems that have been designated as stand-alone ACAT programs are governed in accordance with this instruction.

4.19.1. The PM coordinates the program plans and activities with the Training System Product Group, lead commands, and HQ Air Education and Training Command (AETC) or HQ STARCOM to meet training system life cycle cost, schedule, and performance requirements.

4.19.2. The PM includes system training concepts and training system requirements in all Acquisition Strategy prepared for, and subsequent to, Milestone B or equivalent decision point. The PM includes training system PMs, lead and using commands, and HQ AETC during the development of system acquisition strategies, program plans, and pertinent contract documents such as acquisition System Requirements Documents.

4.19.3. The PM ensures training systems remain current with prime mission systems throughout the life cycle of a system in accordance with approved program documentation and funding. The PM ensures that all post-production system modification and upgrade programs conducted for prime mission systems also include modifications to the affected training systems.

4.19.4. Lead command and the PM determines the training system fielding requirements necessary to support the fielding of prime systems and equipment, to include any FMS considerations. The PM coordinates training system product acceptance, movement, and delivery matters with the lead commands that will receive the training system(s).

4.19.5. The PM assists lead commands with management and reporting of training system concurrency matters.

4.19.6. The PM manages, reports, and executes the accountability and disposal of training devices in accordance with FAR and supplements; AFI 21-103 and AFI 23-101, as applicable.

**4.20. End Use Certificate.** The DAF purchases foreign products to best meet U.S. requirements, consistent with U.S. laws, regulations, and acquisition policy. Acquisitions of foreign products that meet DoD requirements also promote interoperability, standardization, and an expanded procurement base. Execute End Use Certificates when the purchase of such products is in the best interest of the United States and an End Use Certificate is required by the foreign government for the purchase of foreign products. **(T-0) See** DoDI 2040.03, *End Use Certificates*, for more details.

4.20.1. U.S. worldwide security responsibilities are extensive; recognition of these special circumstances require flexibility in international agreements in the authorized uses or transfer of purchased or co-developed articles and data. In various circumstances, international agreements have recognized U.S. “Use for Defense Purposes” of an item or data. DAF personnel should seek to maintain “Use for Defense Purposes” flexibility in End Use Certificates that foreign governments require DoD to sign.

4.20.2. End Use Certificates are divided into three categories:

4.20.2.1. Category I. Applies to acquisition items classified for security purposes by a foreign government and covered by the nonproliferation agreements to which the United States is a party (such as missile technology). This permits the item to be used by or for the U.S. Government in any part of the world and transfer by means of grant aid, International Military Education and Training programs, FMS, and other security assistance and armaments cooperation authorities.

4.20.2.2. Category II. Applies to all other items not defined as either Category I or III.

4.20.2.3. Category III. Limits the right to use an item by or for the U.S. Government in any part of the world; or to provide the item to allies engaged together with the United States in armed conflict with a common enemy.

4.20.3. End Use Certificates are a two-part process consisting of approval of and signature of the End Use Certificates. End Use Certificates are approved prior to contract award. Include requests to delegate signature authority as part of the approval package. Approval and signature authorities for End Use Certificates are as follows:

4.20.3.1. Category I and II. The SECAF, or a delegated civilian officer, appointed by the President with the advice and consent of the Senate, is the approval authority for Category I and II End Use Certificates. **(T-0)** This approval authority may not be further re-delegated. Following approval of Category I and II, signature authority can be delegated to PEO.

4.20.3.2. Category III. The SECAF or the SECAF representative must request authority from the USD(A&S) to purchase an item with a Category III End Use Certificates following approval, signature authority can be delegated to PEO. **(T-0)**

4.20.4. The PM maintains records of all End Use Certificates and provide copies to USD(A&S).

4.20.4.1. The PM should ensure compliance for the life of the purchased item, with the transfer of use restrictions agreed to in signing an End Use Certificates.

4.20.4.2. The PM notifies MAJCOM/FLDCOM headquarters of the End Use Certificates approval and explains any restrictions on the use, transfer, or disposal of the item's hardware, technology, and associated technical data. **(T-1)**

**4.21. Auditability.** Auditability is the ability to assert that its financial statements, a financial statement line item, or a process/sub-process has sufficient control activities and adequate documentation to begin an examination or a financial statement audit by an independent auditor. Process standardization, simplification, and clarity support are key to sustainable auditability.

4.21.1. The PM is responsible for ensuring applicable supporting documentation required for audit is readily accessible to management for oversight and to auditors to support auditability and that appropriate and knowledgeable program office personnel support financial audit activities. **(T-2)**

4.21.2. The PM is responsible to report deficiencies that may impact DAF financial statements and support corrective actions to remediate the deficiency. Reference AFI 65-301, *Internal Audit Services*.

4.21.3. PMs for financial management systems are responsible for ensuring systems are acquired, implemented, and maintained following the processes prescribed in Office of Management and Budget (OMB) Circular A-130, as well as associated financial management system and defense business system guidance. **(T-0) Reference** DoD 7000.14-R and DoDI 5000.75_DAFI63-144 for more information.

**4.22. General Equipment Valuation.** General Equipment Valuation is a DoD initiative to capitalize, and depreciate assets, including modifications, to meet federal accounting standards as defined in DoDI 5000.64, *Accountability and Management of DoD-Owned Equipment and Other Accountable Property*, DoDI 4140.73, *Asset Physical Accountability Policy,* and DoD 7000.14-R.

4.22.1. The PM accounts for all General Equipment assets, including assets subject to capitalization and depreciation, regardless of pathway. **(T-0)**

4.22.2. General Equipment is described in DoD 7000.14-R and includes military equipment, non-military equipment, Government Furnished Equipment, IT assets, and Internal Use Software. **(T-0)** The PM is responsible for the accountability and reporting of Developed Internal Use Software in accordance with DoD 7000.14-R **(T-0)** and DAF guidance. For additional information regarding the accounting for and financial reporting of developed software costs, refer to AFMAN 17-1203, *Information Technology (IT) Asset Management (ITAM)*.

4.22.3. The PM includes a General Equipment program description as part of the Acquisition Strategy (may be waived by the MDA). At Milestone C (or any other decision point that leads to production or procurement of end items to be used for operations) for any program, project, product, or system that has deliverable end items that meet the capitalization threshold, ensure the program's General Equipment description identifies the deliverables at a detail level consistent with level two of the program work breakdown structure (detailed guidance on the work breakdown structures for defense materiel items is located in MIL-STD-881F).

4.22.3.1. The assets meeting the capitalization thresholds.

4.22.3.2. The government furnished property (GFP) or material included in the assets.

4.22.3.3. Other deliverables that accompany the assets (e.g., manuals or tech data).

4.22.3.4. Other types of deliverables purchased with program funding (e.g., initial spares or support equipment), that cannot be directly attributed to a specific asset.

4.22.4. The PM ensures proper accounting and contractual allocation of program expenditures between capitalized assets and expenses. This is completed for every program, project, product, or system that has deliverable assets. Detailed guidance on accounting policy and procedures may be found in DoD 7000.14-R, Vol. 4, *Accounting Policy*.

4.22.5. The PM ensures the CFO reporting data elements (the full cost value and useful life) for military equipment assets (i.e., Aircraft, MRAP, Satellites, and ICBMs) and modifications to military equipment over $1 million are recorded upon initial delivery in the accountable property system of record, either Reliability and Maintainability Information System (REMIS) or Reliability, Availability, Maintainability for Pods (RAMPOD). The PM ensures REMIS and RAMPOD are updated with CFO reporting data elements when inventory items are added, removed, or adjusted as a result of modifications as prescribed in AFI 21-103. The PM ensures the performance of monthly data reconciliations and automated attestation annually in REMIS and RAMPOD for weapon system assets and qualified modifications. REMIS and RAMPOD are the appropriate CFO compliant systems to be used in military valuation and reporting through the Defense Finance and Accounting System. Refer to AFI 21-103 for additional guidance.

4.22.6. The PM provides the PCO with the military evaluation requirements to assist in the creation of proper contract structure to reflect the distinction necessary to facilitate appropriate financial accounting.

4.22.7. The PM ensures all government property is accounted for in the correct Accountable Property Systems of Record in accordance with DoDI 5000.64_DAFI 23-111, *Accountability and Management of DoD Equipment and Other Accountable Property*, to support the program, to include COMSEC assets and property in the possession of the contractor. COMSEC assets found that are not in the correct Accountable Property System of Record are reported in accordance with AFMAN 17-1302-O, *Communications Security (COMSEC) Operations*, **Chapter 9**, and Committee on National Security Systems Instructions (CNSSI) No. 4003, *Reporting and Evaluating Communications Security (COMSEC) Incidents*.

4.22.8. Accountability for assets in which title has passed but delivery to the DoD has not yet occurred is maintained through a Construction in Process account. See DoD 7000.14-R for procedures). This account may reside in either the DoD Component accounting system or the Component Accountable Property System of Record.

4.22.9. Upon delivery, accountable property records are established as appropriate in the Accountable Property System of Record. Coordinate accountability actions with the appropriate Accountable Property Officer within each functional community responsible for the sustainment and provisioning of government property; management and accountability of property records; and management of Accountable Property Systems (e.g., Civil Engineers Maintenance, Medical, Security Forces, and Logistics Readiness).

**4.23. Serialized Item Management.** The purpose of Serialized Item Management is to improve the DAF's capability to manage materiel through the generation, collection, and analysis of data on individual assets to enhance asset visibility and financial accountability and to improve system life cycle management. Serialized Item Management is enabled through IUID, automatic identification technology, and automated information systems. IUID is the assignment and marking of individual assets with a standardized, machine-readable, two-dimensional marking containing a globally unique and unambiguous item identifier. Automatic identification technology is the technology used to scan the marking at points within the supply chain to identify discrete transactions of an asset as well as transmit the data collected from these transactions to automated information systems. It stores and processes the data so it can be used to make informed decisions concerning the management of the asset or the system. Reference DoDI 8320.03, *Unique Identification (UID) Standards for Supporting the DoD Information Enterprise*; DoDI 8320.04 and DoDI 4151.19 for additional guidance.

4.23.1. The PM documents the Serialized Item Management strategy in the Acquisition Strategy and Information Support Plan.

4.23.2. The PM identifies in the Information Support Plan any system operational needs for data to conduct Serialized Item Management for Unique Item Identifiers to be used as the key field to associate data on tangible personal property assets.

**4.24. Item Unique Identification Planning.** The PM, with support from the PSM and in collaboration with the AFMC Automatic Identification Technology program office, plans for and implements IUID. IUID requirements are integrated into planning for development of engineering, manufacturing, maintenance technical data; configuration management; and integrated product support as prescribed in DFARS 211.274-2, DoDI 5000.85, and DoDI 8320.04. For more information and non-directive best practices refer to DAFPAM 63-128.

4.24.1. An IUID Implementation Plan is required for MCA pathway programs and may be prepared for other pathways. **(T-0)**

4.24.2. The PM begins IUID implementation planning after the program has been formally established. The PM includes the approved IUID Implementation Plan in the SEP.

4.24.3. The PM, with support from the PSM, documents the part number and serial-number IUID discriminators to support trending analysis.

4.24.4. For sustainment activities of existing programs, new individual IUID Implementation Plans are not required. However, Sustainment Work Center/Cost Center supervisors will still incorporate planning, programming, budgeting, and execution of IUID requirements for existing programs into day-to-day workload planning and scheduling based on planned workflows, technical documentation, and specifications. **(T-3)** This includes registration in the DoD IUID registry. **(T-0)**

4.24.5. Special Interest IUID requirements:

4.24.5.1. Nuclear Weapons-Related Materiel. All individual nuclear weapon related materiel items are accounted for and managed by serial number. This includes the assignment of a Unique Item Identifier. Consistent with engineering analysis, individual nuclear weapon related materiel items in the DoD Supply System are marked with a machine-readable Unique Item Identifier or assigned a virtual Unique Item Identifier.

4.24.5.2. AF Automated Computer Program Identification Number System (ACPINS). When developing new computer software configuration items for DAF Weapons Systems and Automatic Test Equipment, the Automated Computer Program Identification Number System will be used in numbering each computer software configuration items and related documentation and in ordering and tracking software (reference TO 00-5-16, *Computer Program Identification Number (CPIN) Management*).

4.24.6. The PM ensures information on marked items is included in the DoD IUID.

4.24.7. Program planning for Automated Information Technology infrastructure requirements or Automated Information System enhancements, to include IUID should occur only if the program is responsible for management or maintenance.

**4.25. Government Furnished Property.** The PM identifies, and is accountable for, all required GFP addressed in the contract and other program documentation. The PM working with the Integrated Product Team, will identify, justify, and document the requirement for GFP using the GFP module as described in DoDI 4161.02, *Accountability and Management of Government Contract Property*. **(T-0)** The PM, working with the PCO, ensures the FAR and DFARS GFP clauses are included in all new contracts involving assets for which the government has Title (owned by the DAF) and is in the possession of contractors. The overarching guidance for GFP management is contained in FAR Part 45, DFARS and DFARS PGI Part 245 AFFARS Part 5345, and DoDI 8320.04. The PM ensures the contract specifies the requirements for property accountability in the Accountable Property System of Record as described in DoDI 5000.64 and DAFMAN 23-119, *Government Furnished Property*.

4.25.1. The PM will ensure the list of GFP is provided to the contracting office, and listed as an attachment to the official contract, in the GFP attachment format, in accordance with DFARS Procedures, Guidance, and Information (PGI) 245.103-72, GFP attachments to solicitations and awards. **(T-0)**

4.25.2. The PM, working with the program office, conducts a physical inventory of all GFP, to include data in the contract, the correct Accountable Property System of Record, and the IUID Registry semi-annually for materiel managed by the contractor and annually for equipment used by the contractor. **(T-0)** The PM maintains property accountability in accordance with the procedures of DoDI 5000.64; DoDI 4140.01, *DoD Supply Chain Materiel Management Policy; and Defense Logistics Manual* 4000.25, Vol. 2, *Supply Standards and Procedures.* **(T-0)**

**4.26. Industrial Base Constraints and Supply Chain Risk Management (SCRM) Integration.** Program managers will conduct industrial base constraints and supply chain assessments throughout the life cycle. The PM will integrate identified risks into program risk management activities (see **Chapter 4** and **Chapter 6**, Section 6.13). **(T-1)**

4.26.1. Industrial base constraints are the limitations in capability and capacity of the commercial and organic sources to develop, produce, and sustain the weapon system during its life cycle.

4.26.1.1. Industrial base capability is the technical and business ability to produce, maintain, or repair the item. DoDI 5000.60 provides guidelines to assess the criticality of the item and determine if industrial base intervention is necessary.

4.26.1.2. Industrial base capacity is the ability to provide the capability at the needed quantities.

4.26.1.3. Document industrial base constraints in the Acquisition Strategy and Life Cycle Sustainment Plan (LCSP). This should address mitigation to ensure that the system(s) can be supported, upgraded, and updated during its life cycle. **(T-1)**

4.26.1.4. Review Industrial Capabilities Reports for industrial base or supply chain risks associated with their program and, if identified, notify SAF/AQX's Industrial Liaison Office of the industrial base risk and the impact to the program(s). If other significant industrial base constraints are present within the program, the PM will report these to the implementing command SCRM focal point for further review.

4.26.1.5. Follow the procedures of DoDI 5000.60, when proposing the use of government funds for the preservation of an industrial capability. **(T-0)**

4.26.2. Supply chain risk is anything that has potential to jeopardize the integrity of products, services, people, and technologies or disrupt the flow of product, materiel, information, and finances across the life cycle of a weapon or support system. See DoDI 5000.83_DAFI 63-113 for more information on SCRM.

4.26.2.1. Supply Chain assessments will include threat assessments on critical components per DoDI 5000.83_DAFI 63-113, and assessments of sub-tiers in the prime contractor supply chain. **(T-0)**

4.26.2.2. Supply Chain assessments will evaluate the following risk lenses: financial, foreign influence, human capital, product quality, manufacturing and supply, compliance, technology, cybersecurity, industrial infrastructure, transportation and distribution, and environment. **(T-1)**

4.26.2.3. Conduct supply chain monitoring for identified supply chain vulnerabilities. **(T-1)**

4.26.2.4. Document SCRM risks and mitigations in the Acquisition Strategy and the Program Protection Plan. **(T-1)**

4.26.2.5. Include SCRM requirements in market research, RFPs, contract language, and source selection evaluation criteria. **(T-1)**

4.26.2.6. Contact the command SCRM focal point for assistance. Support command SCRM focal point for Enterprise risks that impact the program. **(T-1)**

4.26.3. SAF/AQR, on behalf of the SAE, will serve as the DAF TSN focal point. The focal point is the overall DAF TSN lead, performs those duties that cannot be performed at the MAJCOM/FLDCOM level, and resolves disputes between implementing commands on matters concerning Enterprise-level TSN activities.

4.26.4. SAF/AQX, on behalf of the SAE, will accomplish the following, in coordination with SAF/SQX for Space related equities:

4.26.4.1. Coordinate industrial capability analysis with key stakeholders and serve as a focal point for industrial base capability and capacity requests from OSD Industrial Base Policy.

4.26.4.2. Oversee the four government-owned/contractor-operated facilities (DAF Plants) which provide production capability and capacity for production of weapon systems. Refer to **Chapter 12** for details.

4.26.4.3. Execute the Defense Production Act Title I, duties of the Defense Priorities and Allocations System officer (DPASO) for the DAF.

4.26.4.4. Oversee the execution of Defense Production Act Title III Executive Agent responsibilities.

4.26.4.5. Execute the Defense Production Act Title VII duties as the DAF representative to provide OSD analyses and risks regarding the cases and matters for the Committee on Foreign Investment in the United States (CFIUS). Coordinate with SAF/SQX for Space related equities.

4.26.4.6. Execute duties as the DAF representative to provide OSD's Merger and Acquisition Office analysis and competition risks regarding pending transactions under Hart-Scott-Rodino Act review.

4.26.5. The Industrial Base Assessment (IBA) Program Manager (currently AFRL/RXM) will:

4.26.5.1. Support SAF/AQX with IBA analysis of the Defense Industrial Base including, but not limited to Mergers and Acquisition; CFIUS; and Congressional reporting requirements.

4.26.5.2. Provide direct assistance to Program Offices and Centers, as requested, with IBA and SME support to identify and mitigate operational and strategic weapon system risk. **(T-1)**

4.26.5.3. As directed by the AFMC/CC, serve as the Executive Agent Program Office (EAPO) for the Defense Production Act, Title III Office.

4.26.5.4. Support the Defense Priorities and Allocations System, Title I, duties of SAF/AQX such as, carrying out analysis of special priority assistance requests, education to field activities, and other requests related to DPAS.

4.26.5.5. Provide implementing command SCRM focal points with identified industrial base risks, analyses, and coordinate recommended risk mitigation actions, as appropriate.

4.26.5.6. Liaises with the Office of Commercial and Economic Analysis (OCEA) on strategic IBA of risks to DAF.

4.26.6. The AFMC and SSC command SCRM focal point will serve as the clearinghouse for SCRM data and collaborate with the IBA Program Manager to both incorporate and inform IBAs. The Command SCRM focal point will: **(T-1)**

4.26.6.1. Establish analytic SCRM capabilities to illuminate, collect, integrate, analyze, synchronize, distribute, and monitor supply chain risk data and efforts. Capabilities will include continuous supply chain monitoring for risks, threats, and vulnerabilities to program supply chains. **(T-1)**

4.26.6.2. Assist Program Managers, as requested, by making available various supply chain analytic capabilities that identify risk, assess, monitor, and mitigate risk in supply chains. **(T-1)**

4.26.6.3. Provide Program Managers standard SCRM language for market research, RFPs, contracts, and source selection evaluation criteria. Maintain standard risk lenses and definitions for supply chain risk assessments. **(T-1)**

4.26.6.4. Coordinate Enterprise risks and mitigation efforts with key stakeholders across the DAF and affected Program Offices. Consolidate findings and provide a trend analysis of enterprise risk to SAF/AQD, SAF/AQR, SAF/AQX, SAF/SQX and SAF/SQA, as applicable, to support higher-level mitigation strategies, periodic reporting, and other DoD or DAF initiatives. **(T-1)**

4.26.6.5. Develop and provide command specific SCRM training. **(T-1)**

4.26.7. Identify critical components vulnerable to counterfeiting throughout the system life cycle. The PM ensures contracts require prime contractors take the steps necessary to implement management controls to guard against counterfeit materiel in the supply chain, to include adequate provisions for sub-contracts. Reference DoDI 4140.01, DoDI 4140.67, *DoD Counterfeit Prevention Policy,* AFI 23-101, and DFARS 246.870, *Contractors' Counterfeit Electronic Part Detection and Avoidance* for further guidance on counterfeit materiel management, to include suspect counterfeit items, and associated Government Industry Data Exchange Program (GIDEP) reporting.

**4.27. Other Acquisition Planning Factors.** The PM considers the requirements in **Table 4.1** as part of acquisition planning. These planning factors do not apply to all programs and are applied when required for the program.

**Table 4.1. Other Acquisition Planning Factors.**

| **Name** | **Requirement Description** | **References** |
|---|---|---|
| Replaced System Support Plan | Summarizes the plan for sustaining the replaced (existing) system during fielding and transition to the new system. | 10 USC Section 4321;<br>DoDI 5000.91 |
| DoD Joint Services Weapon and Laser System Safety Review Process | Liaison with the AF Safety Center (AFSEC/SEW) to ensure appropriate DAF representation to conduct weapon and laser system safety reviews for joint systems being operationally deployed through the Joint Weapon Safety Review Process and Joint Laser Approval process. | DoDI 5000.69 |
| Commercial Product/Service Purchase | Commercial purchase determinations and guidance | 10 USC Section 3452-3458; FAR 2.101, FAR Part 12; FAR Part 10; DFARS Part 212; AFFARS; Part 5312 |

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| Buy American Act | Applies to supplies and construction materials above the micro–purchases thresholds and restricts the purchase of supplies that are not domestic end products for use within the United States. | 41 USC Section 8301-8305; FAR Subpart 25.1 and 25.2, and 25.6; DFARS Part 225; AFFARS Part 5325 |
| Berry Amendment & 10 USC<br>Section 4863 | This amendment establishes domestic source preferences for commodities, such as textiles, specialty metals, and machine or hand tools, in DoD acquisitions above the simplified acquisition threshold. 10 USC Section 4863 establishes domestic source preferences for specialty metals. | 10 USC Section 4862 and Section 4863.<br>DFARS Part 225: AFFARS Part 5325 |
| Lead Systems Integrator (LSI)<br>Limitations | An entity performing LSI functions may not have direct financial interest in the development or construction of an individual system, or element of a system, or is performing inherently governmental functions (IGF). | 10 USC Section 4292; DFARS 209.570 |
| IGF<br>Determinations | Determination from the Installation Manpower Office identifying if there are military (Active or Reserve Component) or civilian employees of the DAF available to perform the functions and if the required services are inherently governmental, acquisition functions closely associated with IGFs, or otherwise inappropriate for performance by contractor employees.<br>An IGF is a particular task or function that must be performed by a government official. IGF is a policy term which encompasses those governance areas that require officials to exercise discretion (e.g., policy decision-making, performance and mission accountability, and execution of monetary transactions and entitlements). | 10 USC Section 4508.<br>DoDI 1100.22, *Policy and Procedures for Determining Workforce Mix*.<br>DoDI 5000.85.<br>FAR Subpart 7.5; DFARS Subpart 207-5 |

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|---|---|---|
| Leasing | Guidance and regulations governing leasing equipment. | FAR Subpart 7.4; DFARS Subpart 207.4; AFFARS 5307.4; *DoD FMR 7000.14- R;* OMB Circulars A-11; A-94, *Guidelines and Discount Rates for Benefit-Cost Analysis Of Federal Programs* |
| Scientific and Technical Information (STINFO) | Properly mark equipment leased and purchased for secondary distribution including the appropriate distribution statement, the export control warning and the proper destruction notice for destruction purposes when the data is no longer needed. Information held on electronic storage systems must be access controlled according to the instructions of the (STINFO) distribution statements. Releasing offices and individuals must maintain a record of controlled STINFO releases for audit purposes. | DoDI 3200.12, *DoD Scientific and Technical Information Program (STIP)*; DoDM 3200.14, *Principles and Operational Parameters of the DoD Scientific and Technical Information Program (STIP)*; DoDI 5230.24, *Distribution Statements on Technical Documents*; DoDD 5230.25, *Withholding of Unclassified Technical Data from Public Disclosure*.<br>DAFPD 61-1; *Management of Scientific and Technical Information*<br>DAFI 61-201; *Management of Scientific and Technical Information (STINFO).* |

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|---|---|---|
| The Technical Cooperation Program | The Technical Cooperation Program is used to acquaint participating countries with each other's technology base programs to avoid duplication and identify technologies of interest for possible collaboration. | DoDI 3100.08, *The Technical Cooperation Program (TTCP)* |
| Value Engineering (VE) Program | DoD Components implement a VE program to improve military worth and reduce acquisition and ownership costs. | FAR Part 48.<br>DoDI 4245.14 |
| Planning for Federal Sustainability in the Next Decade | As a part of integrating ESOH into systems engineering, program offices should evaluate the inclusion of sustainable alternatives in system design and services acquisition. Alternative considerations include but are not limited to air emissions, noise profile, hazardous materials/waste, pollution prevention activities, and recycling. | EO 14057, *Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability*<br>EO 13990, *Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis*<br>Clean Air Act<br>Pollution Prevention Act<br>Clean Water Act<br>Clean Air Act<br>Pollution Prevention Act<br>Clean Water Act<br>Clean Air Act<br>Pollution Prevention Act<br>Clean Water Act" |

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| Non-Lethal Weapons Development | Assess the risk of significant injury and determine the Human Effects Readiness Level, obtain appropriate legal reviews, and obtain DoD Human Effects Review Board evaluation and recommendations prior to each milestone decision. | DoDI 3200.19, *Non-Lethal Weapons (NLW) Human Effects Characterization* |
| Autonomy in Weapon Systems | When developing autonomous and semi-autonomous weapon systems, assess the requirements and guidelines in the directive. | DoDD 3000.09, *Autonomy in Weapon Systems* |
| COMSEC | Applies to the accountability of COMSEC/CCI that require protection and COMSEC/CCI materials that need to be developed, acquired, operated, maintained, and disposed of in accordance with COMSEC instructions. The DAF COMSEC/CCI Central authority is AFLCMC/HNC. Questions related to future modernization and sustainment of COMSEC/CCI should be directed to the AFLCMC/HNC. | DoDI 8523.01, *Communications Security (COMSEC)*; CNSSI No 4001, *Controlled Cryptographic Items*; AFMAN 17-1302-O |
| National Security Exception to Full and Open Competition | The national security exception may be utilized to authorize limited competition in certain narrow circumstances; however, it may not authorize sole- source contracts solely through use of the national security exception (whether under an individual or class Justification and Approval) unless disclosure of the agency's needs to more than one source would compromise national security. | 10 USC Section 3201, *Full and Open Competition.*<br>FAR 6.302-6 |

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| Certification Procedures for Navigation Warfare (NAVWAR)<br>Compliance | Programs will conduct analysis and test of Position, Navigation, and Timing (PNT) enabled equipment against measures of effectiveness-based performance standards. **(T-0)** The Service MDA will report to the DoD CIO the determination regarding the sufficiency of NAVWAR compliance certification for each platform or system under consideration for development or production following the acquisition milestone decision. | DoDI 4650.08, *Positioning, Navigation, and Timing (PNT) and Navigation Warfare* |
| Small Business Programs | Applies to supplies, services, and construction acquisitions above $10,000. | FAR Part 19; DFARS 219; AFFARS 5319.<br>AFPD 90-18<br>AFI 90-1801 |
| External Business Partners | Apply approved Organization Unique Identification (OUID) standards and guidelines for use in DoD business transactions with Federal and State agencies, non-governmental organizations, and domestic and foreign persons and organizations external to DoD | DoDI 8320.06 |

# Chapter 5

## SYSTEMS ENGINEERING

**5.1. Systems Engineering (SE) Overview.** Systems engineering provides the integrating technical processes and design leadership to define and balance system performance, life cycle cost, schedule, risk, system security, and system safety within and across individual systems and programs. The Chief Engineer, in support of the PM, embeds systems engineering in program planning and execution to support the entire system life cycle. It requires optimization at the system level, using system engineering processes (**paragraph 5.2**) throughout the life cycle (**paragraph 5.3**) to integrate user capability needs with design considerations (**paragraph 5.4**) to affordably satisfy customer needs. Reference DoDI 5000.88, *Engineering of Defense Systems*, for additional guidance.

5.1.1. Digital Engineering. The PM utilizes Digital Engineering (to include model-based systems engineering), modular open system approaches, software-defined capabilities, and commercial standards and interfaces to the maximum extent practicable. The PM documents justifications for not utilizing any of these new, rapid tools in the Acquisition Strategy to obtain MDA approval or redirection. The PM leverages DAF enterprise tasks for Digital Materiel Management wherever possible. For systems in sustainment, the program office should implement model-based systems engineering to the maximum extent practicable.

5.1.2. Life Cycle Systems Engineering. The Chief Engineer, in support of the PM, is responsible for assuring the proper application of engineering principles, processes, and practices across the life cycle of a system to ensure that it is satisfying the user's capability needs as defined by the system's lead and using command organizations.

5.1.2.1. Configuration management and control, deficiency reporting and response, reliability, maintainability, integrity, HSI implementation, ESOH risk management, mishap investigation, and other engineering practices and efforts combine to successfully develop, test, build, field, operate, sustain, and dispose of systems.

5.1.2.2. The PM includes representatives of the operational, maintenance and sustainment, safety, and T&E communities in system engineering efforts. In addition, the PM establishes and documents relationships and responsibilities with other organizations that support or interface with systems or end items managed by the PM.

5.1.2.3. The PM monitors the fielded system by tracking and evaluating system data to ensure the preservation of the technical baseline. The PM conducts periodic in-service reviews with the lead and using commands using leading and trailing indicator data elements selected in concert with the users to help ensure effective communication of issues, concerns, and priorities. The PM documents how life cycle systems engineering requirements are being met in the Program Management Agreement, SEP, and LCSP, avoiding duplication.

5.1.3. Systems Engineering Plan. The PM's fundamental technical planning document is the SEP. It defines methods for implementing all system requirements having technical content, technical staffing, and technical management. Reference DoDI 5000.88 for additional SEP guidance.

5.1.3.1. For ACAT ID programs, SAF/AQ or SAF/SQ signs the SEP prior to sending it to USD(R&E) for approval. Per DoDI 5000.88, ACAT ID SEPs are submitted to the USD(R&E) for review and approval at least 30 days before the required approval date. **(T-0)**

5.1.3.2. The MDA is the final SEP approval authority, regardless of program categorization or pathway. Approved MDAP SEPs will be provided to the USD(R&E) for information purposes. **(T-0)**

5.1.3.3. The Chief Engineer, in support of the PM, prepares a SEP for formal approval as required by DoDI 5000.88. **(T-0)** The Chief Engineer complies with standard content and format of the DoD SEP Outline. SEPs should reference organization or portfolio standard engineering process documents, if appropriate. Deviations from these referenced processes should be documented in the SEP.

5.1.3.4. Post Milestone C, the PEO establishes a review and approval schedule for each program office in the PEO's portfolio. The program manager and Chief Engineer review the SEP with attachments for currency and consistency with other program documentation and update and approve it per the PEO's schedule. The SEP should be a "living" "go to" blueprint for the conduct, management, and control of the technical aspects of the government's program from concept to disposal.

5.1.3.5. The PM ensures that the contractor systems engineering approach is aligned to the program's SEP.

5.1.3.6. The Chief Engineer, in support of the PM, should review the relevant digital practices, methodologies, and resources available using the Air Force Digital Guidebook (**https://usaf.dps.mil/teams/afmcde/SitePages/Home.aspx**) prior to implementation of digital engineering plans and strategies.

5.1.4. Mission Assurance for Space Programs. The PM ensures that mission assurance is an integral part of the space system development and is integrated throughout life cycle and documented in life cycle documentation. Mission assurance is defined as the disciplined application of proven scientific, engineering, quality, and program management principles towards the goal of achieving mission success. Mission assurance follows a general system engineering framework and uses risk management and independent assessment as cornerstones throughout the program life cycle. Mission assurance does not replace the mandatory elements of the system safety process described in MIL-STD-882E unless waived by the MDA.

5.1.5. Certifications. Certifications provide a formal acknowledgement by a mandatory approval authority that a system or program meets specific requirements. The PM ensures all necessary certifications are obtained prior to testing and operational use and maintained for the life of the system.

5.1.5.1. The PM includes in the SEP applicable certifications for the program and when they are required. The PM also includes certification activities and events in the IMS.

5.1.5.2. AAFDID provides a list of statutory and regulatory requirements and certifications. DAFPAM 63-128, Attachment 14, Acquisition Program Technical Certifications Summary provides a list of potential certifications for the PM to review for applicability.

5.1.5.3. A PM for aircraft systems (manned and unmanned) obtains required airworthiness approvals in accordance with DAFI 62-601.

5.1.5.4. A PM for nuclear weapon systems obtains required nuclear certification in accordance with AFI 63-125.

5.1.6. System Engineering Role in Contracts. The PM includes system engineering requirements in program contracting efforts to ensure offerors provide sufficient system engineering resources. The primary tool for shaping a program contract is the RFP.

5.1.6.1. The Chief Engineer participates in the RFP development team and is responsible for all technical aspects. The Chief Engineer, at a minimum, ensures that the RFP:

5.1.6.1.1. References required operational documentation and specifications.

5.1.6.1.2. Identifies appropriate design requirements.

5.1.6.1.3. Identifies technical data to be produced by the contractor and accessed by the government.

5.1.6.1.4. Specifies testing and verification requirements.

5.1.6.1.5. Specifies certification requirements.

5.1.6.1.6. Specifies all technical review and technical documentation requirements.

5.1.6.1.7. Specifies system security requirements.

5.1.6.2. Institute of Electrical and Electronics Engineers (IEEE)-15288, *Systems and Software Engineering – System Life Cycle Processes*, IEEE 15288.1, *Standard for Application of Systems Engineering on Defense Programs*, and IEEE- 15288.2, *Standard for Technical Reviews and Audits on Defense Programs*, provide industry-accepted standards and criteria for implementing systems engineering for DoD programs.

5.1.7. System of Systems and Family of Systems Engineering. System engineering for System of Systems and Family of Systems emphasizes interoperability among systems developed under different sponsorship, management, and primary acquisition processes, and often operated by other Services, Agencies, allies, and coalition partners.

5.1.7.1. The PM and Chief Engineer analyzes the program's system operations concept and capability document to identify external dependencies, interoperability, and cybersecurity needs and ensure that they are integrated into the program's requirements decomposition, risk management, interface management, architecture, verification, validation, and other processes.

5.1.7.2. Digital Engineering (to include Model Based Systems Engineering) is an effective means for understanding complex System of Systems, Family of Systems, and can provide insights into interoperability in the total mission context.

5.1.7.3. The Chief Engineer identifies interdependent systems that may be impacted by a proposed baseline change, and during the design process, the PM coordinates the change with the PM (or equivalents) of the affected systems.

5.1.8. DAF Technical Authority. SAF/AQR is the DAF Chief Engineer and Technical Authority per HAF MD 1-10, *Assistant Secretary of the Air Force (Acquisition, Technology and Logistics)*. The DAF Chief Engineer and Technical Authority provides the SAE unbiased technical advice for pre-acquisition investment decisions and throughout the acquisition life cycle; engages implementing commands and center-level engineering offices to provide technical support to PEOs and PMs; oversees DAF Engineering Enterprise policy and guidance; SAF/AQR and SAF/SQA conduct ITRAs and independent post-Preliminary Design Review (PDR) and post-Critical Design Review (CDR) assessments; and directs external technical assessments of programs, as needed. Director of Architecture, Science, and Technology (SAF/SQA), per HAFMD 1-17, *Assistant Secretary of The Air Force (Space Acquisition and Integration)* is responsible for serving as DAF lead for architecture, S&T, and engineering oversight for space systems and programs. SAF/SQA serves as the technical advisor to the Space SAE for pre-acquisition investment decisions, and acquisition program technical and engineering integration program risk, for space systems and programs. Provides systems engineering oversight and support for program development, documentation, and reviews prior to and throughout the acquisition life cycle of space systems and programs. SAF/SQA is also responsible for Independent Technical Risk Assessments (ITRAs) and independent post-Preliminary Design Review (PDR) and post-Critical Design Review (CDR) assessments; and directs external technical assessments of space programs, as required.

**5.2. Systems Engineering Processes.** Application of system engineering processes enables sound decision-making which increases capability maturity and reduces risk. The Chief Engineer ensures systems engineering processes are integrated. The Chief Engineer, in support of the PM, documents the tailoring of systems engineering processes in the SEP.

5.2.1. Technical Management Processes.

5.2.1.1. Technical Planning. Technical planning identifies processes, schedules, personnel and skills, facilities, and other internal and external resources necessary for the technical effort.

5.2.1.2. Decision Analysis. Decision analysis helps the PM and the Chief Engineer understand the impact of uncertainty on decision-making and identifies and communicates a course of action that best balances competing objectives. The Chief Engineer identifies, organizes, and executes necessary trade studies to support program technical decisions and presents the resulting recommendations to the PM.

5.2.1.3. Technical Assessment. Technical Assessment consists of formal technical reviews established by DoDI 5000.88. **(T-0)** Formal technical reviews assess design progress, technical risk, and program maturity at key points in life cycle, and determine whether to proceed to next level of development.

5.2.1.3.1. The PM and Chief Engineer co-chair principal formal technical reviews. The PM ensures that principal formal technical reviews are event-driven and that entrance and exit criteria are established ahead of time as identified in the SEP. **(T-1)** Unless waived through the SEP approval process, the PM will conduct these system level reviews, or equivalent:

5.2.1.3.1.1. System Requirements Review or System Functional Review (SFR).

5.2.1.3.1.2. PDR.

5.2.1.3.1.3. CDR.

5.2.1.3.1.4. System Verification Review or Functional Configuration Audit.

5.2.1.3.1.5. Production Readiness Review (PRR).

5.2.1.3.1.6. Physical Configuration Audit.

5.2.1.3.2. The PM will invite SAF/AQR or SAF/SQA (for space systems) and the supporting Center or FLDCOM engineering functional office to attend the formal technical reviews identified in **paragraph 5.2.1.3**. **(T-0)** The PM will also provide access to the technical data relevant to the issues, risks, and topics to be addressed at a given technical review as follows:

5.2.1.3.2.1. ACAT 1D PMs will include participation of SAF/AQR or SAF/SQA (for space systems), the supporting Center engineering functional office, and OUSD(R&E) representatives in formal system–level reviews identified in **paragraph 5.2.1.3.1**. Additionally, the PM will ensure an OUSD(R&E) representative is invited to all ACAT 1D sub-system PDRs and CDRs. **(T-1)**

5.2.1.3.2.2. For ACAT 1D programs, OUSD(R&E) assesses the system-level PDRs, CDRs, and provides the MDA with the results of these assessments of technical risks, maturation of the technical baseline, and the program's readiness to proceed.

5.2.1.3.2.3. The supporting Center or FLDCOM engineering functional office is designated as the Independent Review Team (IRT) for programs residing in that office. For all ACAT IB/C programs, the supporting Center engineering functional office will provide the PM and SAF/AQR or SAF/SQA (for space systems) with post assessments of the results of system-level PDRs and CDRs. **(T-2)** The supporting Center engineering functional office assessments will use the SAF/AQR or SAF/SQA provided reporting template to identify technical risks and maturation of the technical baseline. **(T-1)** SAF/AQR or SAF/SQA will provide the Center engineering functional offices with the current template, updated as necessary to incorporate lessons learned. The supporting Center or FLDCOM engineering functional office will coordinate the draft post-PDR and/or CDR assessments with the PM, but the supporting Center or FLDCOM engineering functional office director will sign the final version of the assessment and provide it to the PM and SAF/AQR or SAF/SQA as appropriate. **(T-2)** The PM will include that assessment in the information provided to support the MDA's 10 USC 4252, *Major Defense Acquisition Programs: Certification Required Before Milestone B Approval*, certification. **(T-0)** In certain instances, SAF/AQR or SAF/SQA may determine if the ITRA team can accomplish the post-PDR and/or CDR assessment instead of tasking a separate IRT. **(T-1)**

5.2.1.3.3. Technology Readiness Assessments. TRAs are the primary tool to benchmark and begin to assess maturity of critical technologies.

5.2.1.3.3.1. TRAs are a statutory requirement for MDAPs at the Development RFP Release Decision Point with an update at Milestone B to inform the 4252 certifications per DoDI 5000.85. **(T-0)** The USD (R&E) is required to conduct an independent assessment of the Program Manager's TRA for MDAPs as part of the Development RFP Release Decision Point Review. The TRA at Milestone C is a regulatory requirement when Milestone C is Program Initiation.

5.2.1.3.3.2. TRAs are a regulatory information requirement for non-MDAPs.

5.2.1.3.3.3. MDAs for all non-MDAP programs with high technological risk are encouraged to require the Chief Engineer, in support of the PM, to perform a TRA.

5.2.1.3.3.4. For MDAPs that requires a TRA, the PM, in collaboration with Center or FLDCOM Level Engineering, develops the following TRA plan, final critical technology list, draft (also known as "preliminary") TRA report, and submits final TRA report for approval by SAF/AQR or SAF/SQA on behalf of SAF/AQ or SAF/SQ, respectfully. **(T-0)** Reference DoD TRA Guidance for more information.

5.2.1.3.3.5. For programs for which an ITRA is conducted, a technology readiness assessment report is not required. PMs with the Chief Engineer should continue to assess and document the technology maturity of all critical technologies consistent with the technology readiness assessment guidance. ITRA teams may leverage technology maturation activities and receive access to results to perform independent technical reviews and assessments.

5.2.1.3.4. TRAs do not provide a comprehensive assessment of the degree of risk mitigation needed prior to development. Deeper analysis of the actual risks associated with the preferred design and any recommended risk mitigation is conducted in accordance with **Chapter 4**.

5.2.1.3.5. IEEE-15288.2 provides industry-accepted standards/criteria for technical reviews and audits of DoD programs.

5.2.1.4. Requirements Management. The PM implements a consistent and rigorous process for development, establishment, and control of technical requirements. The PM ensures that all validated and approved user capability requirements are traceable to the system specification.

5.2.1.4.1. The PM ensures that program and system requirements include all documented user requirements, airworthiness requirements, statutory, regulatory, system security, and certification requirements; and ensures bi-directional requirements traceability from the systems level down through all verification and validation activities.

5.2.1.5. Risk Management. The Chief Engineer, in support of the PM, ensures technical risks are incorporated into the program's overall risk management effort as described in **Chapter 4.**

5.2.1.6. Configuration Management. Configuration management is formalized change management of the system Technical Baseline, which includes a Functional Baseline, an Allocated Baseline, and a Product Baseline. The Chief Engineer, in support of the PM, uses configuration management to establish and control product attributes and technical baselines across the system life cycle. SAE-EIA-649-1, *Configuration Management Requirements for Defense Contractors,* provides industry-accepted standards/criteria for implementing configuration management on DoD programs. MIL-HDBK-61B contains detailed information about configuration management.

5.2.1.6.1. The Functional Baseline (also referred to as the Requirements Baseline) consists of the documented, validated, and approved system-level (top level) functional and performance requirements and design constraints, their allocation or assignment to the next level, and all approved changes. Typically, it is at the System Functional Review where this baseline is first approved.

5.2.1.6.2. The Allocated Baseline consists of the documented, validated, and approved "design-to" requirements, and all changes thereto approved in accordance with the contract. The allocated baseline includes (a) the physical hierarchy, (b) the design-to requirements for each product in the hierarchy, and (c) separable documentation identifying all design-to requirements for each component and integrated grouping of components.

5.2.1.6.3. The Product Baseline is the "build-to" requirements for each physical element to be manufactured; desired user stories to be addressed by the minimum viable product (MVP) of each software line of effort as well as a description of the agile methodology for continuously delivering software capability throughout the system life cycle; and the "buy-to" requirements for any other physical element, part, or material to be procured. It should be noted that because software is never done, that the baseline should be seen as a minimum viable product (MVP). Software should be continuously delivered and improved.

5.2.1.6.4. Each product support strategy for an asset/system which includes commercial hardware or software must ensure timely updates (e.g., patching, versioning) to maintain cybersecurity as well as to take advantage of commercial production cycles.

5.2.1.6.5. The PM ensures key configuration management practices and responsibilities are summarized in the SEP in accordance with the DoD SEP Outline.

5.2.1.7. Data Management. Data Management identifies, acquires, manages, maintains, and provides access to the technical data and computer software required to manage and support a system throughout its life cycle. The PM manages digital product design data using a DoD standardized product data management system that must be defined and justified within the SEP and approved by the MDA (may be waived by the MDA after consultation with SAF/AQR or SAF/SQA). See **Chapter 4** for Intelligence Mission Data management and Life-Cycle Mission Data Plan guidance and **Chapter 7** for other data management guidance.

5.2.1.8. Interface Management. The interface management process ensures interface definition and compliance among the internal elements that comprise a system, as well as with other systems. The PM and the Chief Engineer ensure that internal and external interface requirement changes are documented in accordance with the program's configuration management plan.

5.2.2. Technical Processes.

5.2.2.1. Stakeholder Requirements Definition. The PM and Chief Engineer work with the user to establish, assess and refine operational needs, attributes, performance parameters, and constraints that flow from and influence user described capabilities.

5.2.2.2. Requirements Analysis. The PM ensures that all relevant program requirements and design considerations (see **paragraph 5.4**) are addressed in program specifications and baselines. If the PM generates program-unique specifications, they should be prepared in accordance with MIL-STD-961, *Defense and Program-Unique Specifications Format and Content*, and informed by its companion document SD-15, *Guide for Performance Specifications*.

5.2.2.3. Architecture Design. The PM ensures that architectural descriptions conform to the standards of the DoD Architecture Framework. For IT and NSS, refer to **Chapter 8**.

5.2.2.3.1. The PM and Chief Engineer ensures architecture products include the program's system as well as its potential interfaces and impacts to external systems (i.e., the System of Systems and Family of Systems environment). The PM develops architecture products as early as possible and maintains them throughout the life cycle.

5.2.2.3.2. The PM applies Modular Open Systems Approach and Open Technology Development to the system architecture design wherever feasible. **(T-0)**

5.2.2.3.3. The PM conducts architecture-based assessments of trades in the overall operational context. The PM and Chief Engineer ensures each principal formal technical review includes an architecture-based assessment to confirm that the system development remains aligned to the operational requirements.

5.2.2.4. Implementation. Implementation provides the system design and creates the lowest level subsystems in the system hierarchy by increasing subsystem maturity, reducing subsystem risk, and ensuring the subsystems are ready for integration, verification, and validation.

5.2.2.5. Integration. Integration systematically assembles lower-level system elements into successively higher-level assemblies with verification at each step.

5.2.2.6. Verification. Verification confirms the program's system satisfies system specifications. The PM and the Chief Developmental Tester/Test Manager manage verification activities, to include developmental testing. The PM and the Chief Engineer review the results of verification throughout the life cycle. Refer to DoDI 5000.89_DAFI 99-103 for the T&E process.

5.2.2.7. Validation. Validation provides objective evidence that the system meets user capability needs and achieves its intended use in its intended operational environment. OT&E is a core validation process. Refer to DoDI 5000.89_DAFI 99-103 for more information on T&E processes. The PM ensures the system is ready for OT&E. The PM implements the dedicated operational testing review process as described in DAFMAN 63-119 and briefs the MDA who certifies system readiness for Initial OT&E.

5.2.2.8. Transition. Transition delivers and sustains a system for the end user.

5.2.2.8.1. The Chief Engineer works with the PSM to ensure the LCSP includes appropriate technical information for sustainment and product support.

5.2.2.8.2. The PM provides TOs and other maintenance and supportability technical data to the end user in accordance with **Chapter 7**.

5.2.2.8.3. The PM establishes and maintains deficiency reporting processes for operators and maintainers and ensures that all validated deficiency reports are tracked to actual resolution of the deficiency. The PM works with the Chief Engineer to document this process in the SEP no later than Milestone C. The PM and Chief Engineer co-chairs deficiency board reviews to oversee this process. The PM will select the tools used for deficiency reporting considering component commonality with other programs, software development methods and other considerations. Refer to TO 00-35D-54, *USAF Deficiency Reporting, Investigation, and Resolution* for process information.

## 5.3. System Engineering Activities in the Life Cycle.

5.3.1. Early Systems Engineering. Early systems engineering encompasses pre-acquisition technical planning, principally in support of MDDs and Analysis of Alternatives, to ensure leadership is offered trade space for portfolio and risk management. The results of early systems engineering activities are documented in the Concept Characterization and Technical Description and are the principal artifacts of early systems engineering. The *AF Early Systems Engineering Guide* provides additional information. SAF/AQR or SAF/SQA, as applicable, reviews the Concept Characterization and Technical Description and provides technical recommendations to the decision authority. Provide SAF/AQR or SAF/SQA Concept Characterization and Technical Descriptions prepared for requirements validation and approval preceding MDD 90 days prior to the decision (can be waived by the MDA).

5.3.2. Systems Engineering During System Development. During system development, Chief Engineer uses the systems engineering processes (**paragraph 5.2**) to integrate user capability needs with design considerations (**paragraph 5.4**) to affordably satisfy customer needs.

5.3.3. Sustainment Systems Engineering. Beginning at Initial Operational Capability (IOC), sustainment systems engineering is focused on maintaining the technical baseline of the system. Key sustainment systems engineering considerations include but are not limited to the following:

5.3.3.1. Configuration Management (see paragraph **5.2.1.6** and **5.2.1.7**.).

5.3.3.2. Deficiency Reporting (see **paragraph 5.2.2.8.3**.).

5.3.3.3. DMSMS (see **paragraph 5.4.9**.).

5.3.3.4. Reliability and Maintainability (see **paragraph 5.4.21**.).

5.3.3.5. Manufacturing and Quality Management during operations and sustainment. Refer to DAFI 63-145, *Manufacturing and Quality Management*.

5.3.3.6. Additive Manufacturing. Use of Additive Manufacturing to build replacement parts for a system under a PM's configuration control must be approved at the appropriate level. Reference DoDI 5000.93_DAFI 63-149, *Use of Additive Manufacturing*, for more information.

5.3.3.7. Engineering and Technical Support to Field-level Maintenance Organizations. PMs provide engineering and technical support throughout the life cycle, beginning with Initial OT&E. To provide engineering and technical support, PMs use organic or contractor resources or a combination of the two. PMs address the engineering and technical support strategy in the Milestone C SEP.

5.3.4. Systems Engineering in Support of Demilitarization and Disposal. See **Chapter 7**.

**5.4. Systems Engineering Design Considerations.** The Chief Engineer uses system engineering processes across the life cycle to accomplish trade-offs to provide balanced solutions, optimized at the system-level, that affordably satisfy required user capabilities. PMs should identify key design considerations that are critical to achieving the program's technical requirements in the plan's mandatory Design Considerations table in accordance with the standard DoD SEP outline.

5.4.1. Unique Design Considerations.

5.4.1.1. Recorded System Information. For any system acquired, developed, or sustained by the DAF, the PM collaborates with data user stakeholders to conduct a systematic assessment of information needs (including mishap investigation, integrity programs, maintenance, and operational analyses) to ensure the capture of critical information and optimization of benefit while minimizing cost. This includes an assessment of needed interfaces with existing information systems (e.g., Reliability and Maintainability Information System (REMIS) Predictive Analytics and Decision Assistant, (PANDA)). The PM re-assesses information needs and data collection capabilities as a part of aircraft and system modifications. The uses of recorded system information include the following:

5.4.1.1.1. Mishap Investigation. All DAF aircraft requiring DAF airworthiness approval, record crash survivable parametric and acoustic data that meets the minimum requirements listed in AFPAM 63-129. All spacecraft requiring flight worthiness approval, provide recorded launch and spacecraft data.

5.4.1.1.2. The PM ensures that aircraft employ devices (i.e., Emergency Locator Transmitters and Underwater Locator Beacons) to enable recovery of the data recording equipment in the event of a mishap. Consideration may be given to inhibiting these devices to address combat operational concerns.

5.4.1.1.3. The PM provides the AF Safety Center the capability (hardware, software, and training) to download and analyze crash survivable data for mishap investigations, and updates that capability, as needed, throughout the life cycle.

5.4.1.1.4. For aircraft and space systems that do not meet these requirements, the Commander of the lead command may waive the requirements. Parameters that are not applicable to a particular platform (e.g., a C-130 afterburner nozzle position) do not need to be waived.

5.4.1.1.4.1. The lead command's Director of Safety is responsible for preparing, staffing, and submitting waiver requests to the Commander.

5.4.1.1.4.2. The PM provides the lead command with the data on the cost, schedule, and performance impacts of meeting these requirements.

5.4.1.1.4.3. Command Directors of Safety report approved waivers within 30 days to the Air Force Chief of Safety (AF/SE) and provide the cost, schedule, and technical information that supported the waiver decisions.

5.4.1.1.4.4. Existing waivers from the Vice Chief of Staff of the Air Force remain valid in accordance with their original terms and conditions.

5.4.1.1.5. Military Flight Operations Quality Assurance. Military Flight Operations Quality Assurance provides insight into the operational usage of the aerial system through analysis of flight maneuvers and identification of hazard trends. The Military Flight Operations Quality Assurance program works with operations, system program offices, maintenance, training, and safety to facilitate risk assessment and hazard mitigation activities. See DAFI 91-225, *Aviation Safety Programs*, for more information.

5.4.1.1.5.1. The PM provides integrated system solutions that support customer-defined Military Flight Operations Quality Assurance capability needs for each Mission Design Series the DAF acquires or uses (including manned and unmanned). Reference AFPAM 63-129 for a listing of parameters.

5.4.1.1.5.2. The PM assists lead commands in assessing risks and determining handling/mitigation measures when Military Flight Operations Quality Assurance data analyses identify new hazards.

5.4.1.1.6. System Health and Usage Monitoring. The collection and monitoring of Service use and performance data (including maintenance discrepancy reports, user feedback, system and component failure reports, and mishap data) enables the continuous assessment of fielded system technical health against documented performance requirements and effectiveness, suitability, and risk measures.

5.4.1.1.6.1. The PM integrates system and end-item operational and maintenance data collection, storage, and transmission.

5.4.1.1.6.2. For aircraft, the PM integrates user-defined, capability-based, enhanced flight data requirements (e.g., integrity, training, Military Flight Operations Quality Assurance, etc.) with the mandatory crash survivable recorder requirement when identifying an aircraft flight data parameter recording, storage, and transmission capability.

5.4.1.2. Product and System Integrity. For each Aircraft Mission Design Series, the DAF acquires, uses, or leases, the PM establishes integrity programs.

5.4.1.2.1. The PM develops, documents, and executes integrity programs by applying DAFI 63-140, and tailoring and integrating to the extent practicable: MIL-STD-1530D, *Aircraft Structural Integrity Program (ASIP)*; MIL-STD-1796, *Avionics Integrity Program (AVIP)*; MIL-STD-1798C, *Mechanical Equipment and Subsystems Integrity Program*; MIL-STD-3024, *Propulsion System Integrity Program*; and MIL-HDBK-513, *Low Observable Integrity Program*.

5.4.1.2.2. PMs integrate corrosion prevention and control into the Mission Design Series integrity programs.

5.4.1.2.3. PMs ensure that an individual certified to Level III in accordance with *National Aerospace Standard 410, Certification & Qualification of Nondestructive Test Personnel*, approves non-destructive inspection procedures, to include procedures for TCTO and one time inspection purposes (e.g., Engineering Technical Assistance Requests).

5.4.1.3. AF Metrology and Calibration. Acquisition of systems and equipment includes assessment of calibration and measurement requirements in accordance with AFMAN 21-113, *Air Force Metrology and Calibration (AFMETCAL) Management*.

5.4.1.4. Space Unique Considerations (RESERVED).

5.4.2. Accessibility. The PM ensures all electronic and IT systems comply with Section 508 of the Americans with Disabilities Act (36 Code of Federal Regulations (CFR) Section 1194), unless exempt under FAR 39.204 as a military system or NSS. **(T-0)**

5.4.3. Affordability-Systems Engineering Tradeoff Analysis.

5.4.3.1. MDAPs that proceeded through Milestone A (or other initial milestone) after October 1, 2017, require a Secretary of Defense Cost goal vice an affordability goal or cap. **(T-0)** See DoDI 5000.02 for additional guidance.

5.4.3.2. At Milestone B, the PM provides the results of cost analyses that quantitatively depict the impact of trading cost against affordability drivers, such as capability and other technical parameters (including KPPs when they are major cost drivers) to show the program has established a cost-effective design point for these affordability drivers.

5.4.4. Anti-Counterfeiting. The PM manages the risk of counterfeit components as a part of Program Protection Planning as described in **Chapter 6**.

5.4.5. Commercial-Off-the-Shelf. For COTS systems and components being contemplated for use in the program, the PM evaluates the risks of using those items in the intended military use environment. The PM applies the appropriate system engineering processes and design considerations to COTS systems and components through the life cycle.

5.4.6. Communications, Navigation, Surveillance/Air Traffic Management (CNS/ATM). Secure CNS/ATM capabilities, appropriate for the air system mission, are required for safe and compliant operations in civil and DoD-controlled airspace. The AF has established the CNS/ATM Center of Excellence (COE) as the centralized DAF resource for design expertise to assist program offices with the implementation of life cycle CNS/ATM requirements and with the execution of CNS/ATM performance assessments in support of airworthiness certifications. AFPAM 63-129 contains additional guidance and resources. For all AF air systems, the PM, supported by the Chief Engineer, is responsible to:

5.4.6.1. Include CNS/ATM capabilities and functionality in the aircraft's airworthiness certification baseline and assess their airworthiness in accordance with Airworthiness Bulletin 325, *Communications, Navigation, Surveillance/Air Traffic Management (CNS/ATM) Compliance Assessment Process.* **(T-0)**

5.4.6.2. Obtain standard CNS/ATM equipment through the centralized contracts and approved products lists that are managed by the CNS/ATM COE. If not financially advantageous, technically suitable, or supportive of program schedule, document decisions to deviate from this direction in the MDA approved Acquisition Strategy.

5.4.6.3. For those CNS/ATM capabilities that require lifetime compliance assurance with civil standards (e.g., Reduced Vertical Separation Minimum), establish and document sustaining engineering procedures to maintain currency.

5.4.6.4. Provide requested technical support and documentation to the using MAJCOM/FLDCOM's CNS/ATM operational approval process (reference AFMAN 11-202, Vol. 3, *General Flight Rules*).

5.4.6.5. If a CNS/ATM capability requires a navigation accuracy of Area Navigation/Required Navigation Performance of four nautical miles or tighter, obtain a Letter of Acceptance from the CNS/ATM COE that formally documents the acceptance of the applicants' processes, procedures, tools, and the plan for execution.

5.4.6.6. Within one week of discovery or notification of an issue impacting an air system's CNS/ATM capability, notify the COE, affected MAJCOM/FLDCOM, and the AF Technical Airworthiness Authority.

5.4.7. Corrosion Prevention and Control. The AF Corrosion Prevention and Control program is a part of the long-term DoD strategy that supports efforts to reduce total system ownership cost. See DoDI 5000.67; MIL-STD-1568D, *Materials and Processes for Corrosion Prevention and Control in Aerospace Weapons Systems*; and DoDI 5000.88 for additional guidance. Further information, including the *DoD Corrosion Prevention and Control Planning Guidebook for Systems and Equipment*, can be found at the Defense Acquisition University website [**https://www.dau.edu/tools/corrosion-prevention-and-control-planning-guidebook-military-systems-and-equipment**].

5.4.7.1. The Chief Engineer, in support of the PM, conducts and integrates corrosion prevention and control planning into appropriate program documentation in accordance with DoDI 5000.67. The PM may include corrosion planning documentation in a separate, Corrosion Prevention and Control Plan, which is considered a best practice, or the PM includes corrosion planning in the SEP and LCSP. For ACAT I programs, the PM provides the AF Corrosion Control and Prevention Executive, the Corrosion Prevention and Control Plan, SEP, or LCSP prior to obtaining PEO approval.

5.4.7.2. The PM evaluates corrosion prevention and control as a part of system engineering trades throughout program design and development activities.

5.4.7.3. For New Starts, the PM obtains early AF Corrosion Control and Prevention Executive involvement in corrosion planning including comparing program document content to the guidance in the *DoD Corrosion Prevention and Control Planning Guidebook for Military Systems and Equipment* for each life cycle phase.

5.4.8. Critical Safety Items. Critical safety items are parts whose failure could cause loss of life, permanent disability or major injury, loss of a system, or significant equipment damage. Critical safety items should not be confused with “safety critical items” as defined in MIL-STD- 882E. Title 10 USC Section 3243, *Encouragement of New Competitors: Qualification Requirement* contains the critical safety items statutory requirements. DAF CSI regulatory requirements are contained in AFI 20-106_IP, *Management of Aviation Critical Safety Items*. See also DFARS 246.407, *Nonconforming Supplies or Services*, and DFARS 246.371, *Notification of Potential Safety Issues*.

5.4.8.1. The program office Chief Engineer is the “Engineering Support Activity,” as defined in AFI 20-106_IP, for all critical safety items under the direct configuration control of the program.

5.4.8.2. The Chief Engineer identifies critical safety items prior to critical design review and identifies critical safety items on bills of materials.

5.4.8.3. Critical safety items not under the configuration control of the program must come from sources approved by the Engineering Support Activity for those items.

5.4.8.4. The Chief Engineer, in support of the PM, develops and maintains an updated list of critical safety items and corresponding critical characteristics, updated annually after Full Operational Capability (FOC). The PM should ensure a process is in place to track the impact of mishap investigations, deficiency reports, engineering change proposals and other processes that may affect the inclusion of items on the list of critical safety items or result in a change of the critical characteristics for critical safety items.

5.4.9. Diminishing Manufacturing Sources and Material Shortages. DMSMS is the loss, or impending loss, of manufacturers or suppliers of items, raw materials, or software.

5.4.9.1. SAF/AQ, in collaboration with SAF/SQ establishes policy and provides management direction and oversight of the DMSMS program. Refer to DoDI 4245.15, *Diminishing Manufacturing Sources and Material Shortages Management*, for additional information. **(T-0)**

5.4.9.2. AFMC/CC is the designated lead office to implement integrated risk based proactive DMSMS policy, procedures, regulations, guidance, and training. USSF/SSC will designate a formal point of contact (POC) to work with AFMC and to implement DMSMS policy and guidance tailored for Space Systems.

5.4.9.3. The PM includes integrated risk based proactive DMSMS management, procedures, guidance, and training for systems engineering, manufacturing, sustainment, technology protection, and T&E to reduce the occurrence and impact of DMSMS (e.g., cost, schedule delays, readiness) on programs and systems. **(T-0)**

5.4.9.4. The PM integrates DMSMS into program risk management activities (see **Chapter 4 and Chapter 6**). **(T-0)** Consult SD-22, *DMSMS Guidebook* and SD-26, *DMSMS Contract Language*, for additional information.

5.4.10. Disposal and Demilitarization. See **Chapter 7**.

5.4.11. Environment, Safety and Operational Health. The Chief Engineer, in support of the PM, identifies, assesses, and mitigates potential ESOH risks to personnel, the system, and the environment, and manages ESOH compliance requirements. The Chief Engineer:

5.4.11.1. Ensures ESOH risk management is integrated into systems engineering using the system safety process described in MIL-STD-882E. The Chief Engineer uses the standard matrix in MIL-STD-882E unless the PM obtains formal MDA approval to use an alternative matrix. The Chief Engineer documents the specific matrix used by the program and any required MDA approval of an alternative matrix in the SEP. **Note**: No approval is required for an alternative ESOH risk matrix that adds only quantitative values to the probability levels consistent with the probability word definitions in MIL-STD-882E. However, only the MDA can approve deviations from the standard MIL-STD-882E probability level word definitions and severity categories. As required by **Chapter 4**, the PM uses the translation matrix in **Attachment 3** to present the status of current High and Serious ESOH risks on the standard 5x5 risk matrix during technical and program reviews.

5.4.11.2. Eliminates hazards where possible and manage ESOH risks of hazards that cannot be eliminated.

5.4.11.3. Identifies and integrates ESOH design considerations and compliance requirements into the systems engineering process. Examples of this include but are not limited to the following:

5.4.11.3.1. Compliance with National Environmental Policy Act (NEPA)/EO 1211.

5.4.11.3.2. Obtaining required design certifications (e.g., airworthiness).

5.4.11.3.3. Prohibiting or strictly controlling the use of banned or restricted hazardous materials. The Chief Engineer will not introduce new operational or maintenance requirements for out-of- production Class I or Class II Ozone Depleting Substances unless approved or waived by SAF/AQ (see DFARS Subpart 223.8, Ozone-Depleting Substances and Greenhouse Gases, and AFFARS 5323.8, Ozone-Depleting Substances). **(T-0)** The Chief Engineer will not introduce new operational or maintenance requirements for hexavalent chromium unless approved by the PEO with the coordination of the AF Corrosion Control and Prevention Executive (see DFARS Subpart 223.73, Minimizing the Use of Materials Containing Hexavalent Chromium).

**(T-0)** The Chief Engineer will not introduce new operational or maintenance requirements for regulated hydrofluorocarbons and will transition to hydrofluorocarbon alternatives in existing systems when those alternatives meet mission requirements, are cost effective, and are available from the domestic and allied industrial base (see USD(A&S) memorandum, Establishment of Department of Defense Hydrofluorocarbon Allowance Management and Allocation Process per the American Innovation and Manufacturing Act, 18 Jul 22). **(T-0)**

5.4.11.3.4. In response to lead or using command guidance regarding noise and emissions restrictions at planned fielding location(s), provide system noise and emissions data to support basing of the system.

5.4.11.4. Includes the ESOH management planning in the SEP. The SEP identifies the strategy for integrating ESOH considerations into systems engineering process and relationships between ESOH effort and other systems engineering activities, the ESOH risk matrix used by the program, and contractual ESOH requirements.

5.4.11.4.1. During the SEP approval process for Milestones B and C, both the PESHE and the NEPA/EO 12114 compliance schedule must be provided to all reviewers. Additional ESOH sustainment considerations after Milestone C are included in the LCSP.

5.4.11.4.2. The Chief Engineer of fielded systems should periodically review the PESHE at a minimum every five years and update as needed.

5.4.11.5. Uses the Programmatic Environment, Safety, and Occupational Health Evaluation (PESHE) as the life cycle repository for program office ESOH data, to include hazard tracking system data, hazardous materials, ESOH compliance requirements, and environmental impact information necessary to support NEPA/EO 12114, *Environmental Effects Abroad of Major Federal Actions*, analysis.

5.4.11.5.1. For ESOH risks, the PESHE identifies hazards and records initial ESOH risk assessments, risk handling/mitigation measures, target risk levels, current risk levels, event risk levels, and risk acceptance decisions. See **Chapter 4** for ESOH risk assessment, mitigation and acceptance.

5.4.11.5.2. For hazardous materials, either imbedded in the system or used for system O&M, the PESHE includes information on the locations, amounts, disposal requirements, and special training requirements. The Chief Engineer can use the optional Task 108, *Hazardous Materials Management Plan,* in MIL-STD-882E or the Aerospace Industries Association (AIA) National Aerospace Standard (NAS) 411, *Hazardous Materials Management Program*, as the basis for a program's hazardous materials management. Both Task 108 and NAS 411 require a contractual listing of the hazardous materials, which the program intends to manage. The contractual listing categorizes each listed hazardous material as Prohibited, Restricted, or Tracked. NAS 411-1, *Hazardous Material Target List*, provides a DoD-AIA agreed-upon baseline listing of hazardous materials for each category to use as the starting point in defining the program's list of hazardous materials.

5.4.11.6. Uses the NEPA/EO 12114 compliance schedule to document completed and projected analyses. The Chief Engineer should also incorporate analyses that are on the critical path. The NEPA/EO 12114 compliance schedule includes, but is not limited to:

5.4.11.6.1. Each proposed action (e.g., testing or fielding).

5.4.11.6.2. Proponent for each action (i.e., the organization that exercises primary management responsibility for a proposed action or activity).

5.4.11.6.3. Anticipated start date for each action at each specific location.

5.4.11.6.4. Anticipated NEPA/EO 12114 document type.

5.4.11.6.5. Anticipated start and completion dates for each document.

5.4.11.6.6. The document approval authority.

5.4.11.7. Ensures the PESHE and the NEPA Compliance Schedule are approved as a part of the SEP at Milestones B and C. They are reviewed and approved by the PEO at the Full-Rate Production Decision Review/Full Deployment Decision Review/Build Approval. In support of these approvals, the Chief Engineer obtains coordination of the PESHE from the supporting ESOH functional areas as applicable. The Chief Engineer obtains coordination of the SEP at Milestone A from the supporting ESOH functional areas since the PESHE and NEPA Compliance Schedule are not included with the SEP at Milestone A. The ESOH Management content is critical for the SEP at Milestone A because it governs the Technology Maturation and Risk Reduction phase ESOH activities.

5.4.11.8. Provides the ESOH hazard data (including the hazardous materials information) to the AF Civil Engineer Center (AFCEC) responsible for including these data in TO 00-105E-9, *Aerospace Emergency Rescue and Mishap Response Information (Emergency Services)*.

5.4.11.9. Provides a safety release for the system prior to each developmental and operational test involving known system hazards to people, equipment, or the environment. The safety release identifies the hazards involved in the test and their formal risk acceptance. This is in addition to and can inform any safety release provided by the T&E organization.

5.4.11.10. Provides system specific ESOH analyses and data to support using commands' and T&E organizations' NEPA and EO 12114 documentation requirements.

5.4.11.11. Works with DAF Safety Center to provide the inputs required by DoDI 6055.07, *Mishap Notification, Investigation, Reporting, and Record Keeping*, Enclosure 4, section 3.b.(9) as part of mishap investigations of all Class A and B mishaps involving their systems. The PM provides analyses of the ESOH hazards that may have contributed to the mishap under investigation, and makes recommendations for resulting materiel risk mitigations measures, especially those designed to minimize the potential for human error.

5.4.11.12. Integrates ESOH and Human Systems Integration.

5.4.12. Human System Integration. Each system consists of three major components: hardware, software, and human. The SEP documents how the PM integrates HSI design considerations early in the design process and throughout the life cycle. Human Factors Engineering is conducted to provide safe and effective human interfaces and ensure that systems are designed to account for human capabilities and limitations. For additional HSI guidance contact the AFLCMC Crew Systems and HSI Enterprise Branch.

5.4.12.1. HSI addresses the integration of seven domains: manpower, personnel, training, safety and occupational health, habitability, force protection and survivability, and human factors engineering. HSI activities occur throughout the acquisition life cycle and include considerations during system design, development, fielding and sustainment.

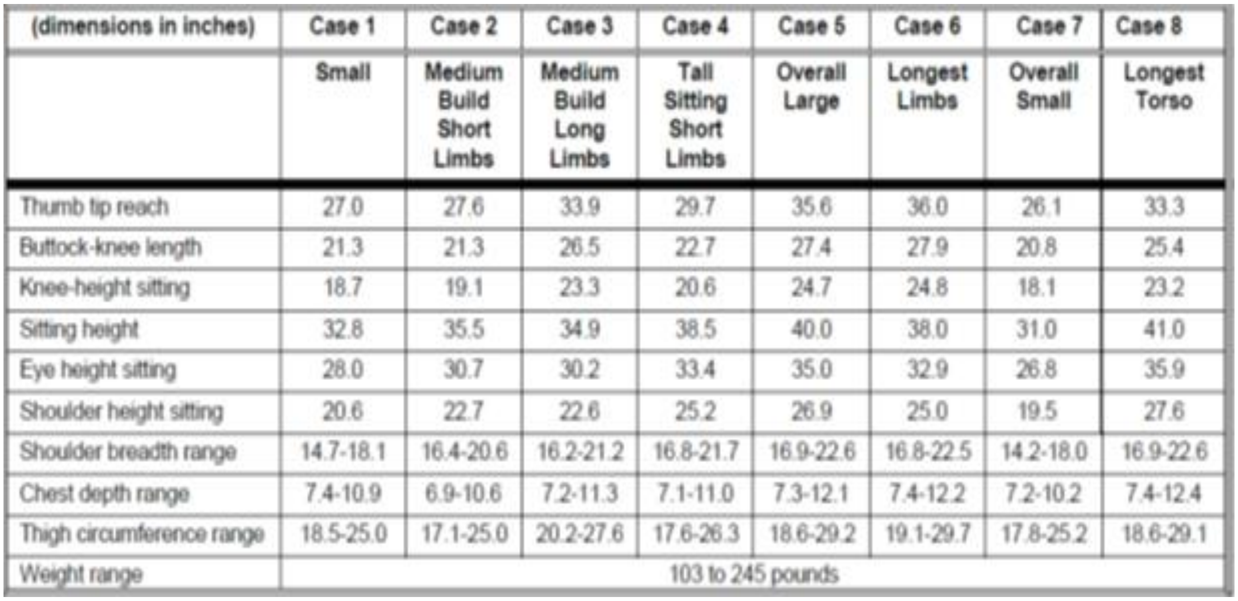
5.4.12.2. For additional information on HSI implementation, refer to Enclosure 7, DAFPAM 63-128, MIL-STD-1472H, *Human engineering*, and MIL-STD-46855A, *Human Engineering Requirements for Military Systems, Equipment, and Facilities*.

5.4.12.3. Crew stations and maintainer interfaces are special emphasis areas for DAF HSI. Crew stations and maintainer interfaces are the primary human interfaces for manned and unmanned air systems and must promote situational awareness, facilitate task accomplishment, and physically accommodate operators and maintainers using the most current anthropometric data. The PM, supported by the Chief Engineer, works jointly with the AF Flight Standards Agency, the AFLCMC Crew System and HSI Enterprise Branch, the AFOTEC, the AF Test Center, and MAJCOM/FLDCOM operational representatives to ensure that crew stations and maintainer interfaces meet end user requirements and avoid deviations from DAF standards for accommodation, displays, task performance evaluation, alerting, and symbology. AFLCMC’s Crew Systems Engineering and Human Systems Integration Enterprise Branch (AFLCMC/EZFC) and Human Systems Division’s Airmen Accommodation Lab (AAL) will ensure long-term anthropometric studies, existing and future anthropometric data as well as planned studies are included in design specification building. For additional information on cockpit, crew station, and maintainer design and best practices, see AFPAM 63-129, Chapter 6.

5.4.12.3.1. The PM will ensure the anthropometric design specification minimums will be included on all applicable modifications and acquisitions.

5.4.12.3.2. Anthropometric design specifications must accommodate body sizes of at least the central 95 percent of the U.S. recruiting population including all races and genders. Program design specification will be built to ensure all systems meet the 8 test cases identified in **Table 5.1** below to ensure 95 percent accommodation. Preference will be given to solutions that exceed 95 percent accommodation rates. AFLCMC is authorized to update **Table 5.1** as needed to meet policy intent.

**Table 5.1. Use Cases for 95 Percent Accommodation.**



| (dimensions in inches) | Case 1 | Case 2 | Case 3 | Case 4 | Case 5 | Case 6 | Case 7 | Case 8 |
|---|---|---|---|---|---|---|---|---|
| | Small | Medium Build Short Limbs | Medium Build Long Limbs | Tall Sitting Short Limbs | Overall Large | Longest Limbs | Overall Small | Longest Torso |
| Thumb tip reach | 27.0 | 27.6 | 33.9 | 29.7 | 35.6 | 36.0 | 26.1 | 33.3 |
| Buttock-knee length | 21.3 | 21.3 | 26.5 | 22.7 | 27.4 | 27.9 | 20.8 | 25.4 |
| Knee-height sitting | 18.7 | 19.1 | 23.3 | 20.6 | 24.7 | 24.8 | 18.1 | 23.2 |
| Sitting height | 32.8 | 35.5 | 34.9 | 38.5 | 40.0 | 38.0 | 31.0 | 41.0 |
| Eye height sitting | 28.0 | 30.7 | 30.2 | 33.4 | 35.0 | 32.9 | 26.8 | 35.9 |
| Shoulder height sitting | 20.6 | 22.7 | 22.6 | 25.2 | 26.9 | 25.0 | 19.5 | 27.6 |
| Shoulder breadth range | 14.7-18.1 | 16.4-20.6 | 16.2-21.2 | 16.8-21.7 | 16.9-22.6 | 16.8-22.5 | 14.2-18.0 | 16.9-22.6 |
| Chest depth range | 7.4-10.9 | 6.9-10.6 | 7.2-11.3 | 7.1-11.0 | 7.3-12.1 | 7.4-12.2 | 7.2-10.2 | 7.4-12.4 |
| Thigh circumference range | 18.5-25.0 | 17.1-25.0 | 20.2-27.6 | 17.6-26.3 | 18.6-29.2 | 19.1-29.7 | 17.8-25.2 | 18.6-29.1 |
| Weight range | 103 to 245 pounds | | | | | | | |

5.4.12.3.3. When circumstances arise that prevent meeting the 95 percent accommodation threshold, a waiver must be granted from the SAE for the program. The SAE may choose to delegate waiver authority.

5.4.13. Insensitive Munitions. The PM for all systems containing energetics ensures that applicable insensitive munitions requirements are incorporated into the system design and that all required safety reviews and certifications are obtained. The PM will comply with insensitive munitions requirements in accordance with DoDI 5000.88. **(T-0)**

5.4.14. Intelligence. See **Chapter 4.**

5.4.15. Item Unique Identification. See **Chapter 4**.

5.4.16. Interoperability & Dependency (I&D).

5.4.16.1. See **paragraphs 5.1.6** for System of Systems and Family of Systems and **5.2.2.3** for Interoperability and Dependency in architecting. Refer to **Chapter 8** for additional information on interoperability of IT and NSS.

5.4.16.2. DoDM 4120.24, DoDI 2010.06, and AFI 60-101 provide guidance on considering applicable U.S.-ratified International Standardization Agreements for system compatibility and logistics interchangeability of materiel in allied and coalition operations.

5.4.16.2.1. The PM addresses system compatibility and logistics interchangeability for allied and coalition operations (e.g., databases, fuel, transportability, ammunition, etc.). The PM identifies areas that may require verification to ensure a capability is interoperable in accordance with the JCIDS Manual.

5.4.16.2.2. The PM addresses future multinational operations in acquisition of all materiel intended for use by U.S. Forces. Refer to DoDI 2010.06. For programs delivering capabilities with potential use in allied and coalition operations, the PM identifies and assesses International Standardization Agreements applicable to areas such as cross-servicing (with interchangeable fuels, lubricants, gases, and munitions), armaments, air transport and airdrop, medical evacuation, combat search and rescue, crash/fire/rescue, and geospatial/intelligence (including classification standards).

5.4.16.2.3. Following approval of the Acquisition Strategy, the PM notifies AF/A5/7 and SAF/AQ (SF/S5/8 and SAF/SQ, for space systems and programs) of all applicable International Standardization Agreements that are not included in an acquisition/systems requirements document or system specification to allow agreement reservations to be registered with appropriate multinational body. Refer to AFI 60-106, *International Military Standardization (IMS) Program*, for further information.

5.4.17. Modular Open System Approach. The Modular Open System Approach is used to design and development modular, interoperable systems that allow components to be added, modified, replaced, removed, and supported by different vendors throughout each system's life cycle. The PM applies the Modular Open System Approach and Open Technology Development wherever feasible. The Chief Engineer uses the technical architecture and market research of potential technologies and sources of supply to craft an open system approach that maximizes technology reuse and system interoperability, and that reduces dependency on proprietary data and total life cycle costs. Refer to DoDI 5000.88 for more information.

5.4.18. Operational Energy. The Chief Engineer incorporates energy demand in the system trade space along with other performance issues to support informed decision-making to respond to the threshold and objective values of the Energy KPP for the program. The Chief Engineer, in support of the PM, will identify opportunities to reduce energy supportability and demand.

5.4.19. Packaging, Handling, Storage and Transportation (PHS&T). The PM, with the support of the Chief Engineer and PSM, identifies PHS&T requirements based on operational capabilities and life cycle cost considerations. See DoDI 4140.01, DoDM 4140.01 Vol. 2, AFPD 24-6, *Distribution and Traffic Management*, and DAFI 24-602 Vol. 2, *Cargo Movement*, for weapon systems PHS&T; a MIL-STD-2073-1E, *Department of Defense Standard Practice for Military Packaging*, and FAR Subpart 47.2.

5.4.20. Producibility, Quality & Manufacturing Readiness. This design consideration is closely linked to the technology readiness assessment process, reliability and maintainability, product and system integrity, and the deficiency reporting process. SAE-AS6500, *Manufacturing Management Program*, provides industry-accepted standards/criteria for implementing manufacturing management practices on DoD programs. Refer to MIL-HDBK-896A and the *Manufacturing Management Program Guide* for more information.

5.4.20.1. The PM and Chief Engineer ensure that the contractor establishes a quality management system to ensure product quality and consider including achievement of product quality objectives in evaluations of contractor performance. Refer to DAFI 63-145.

5.4.20.2. The PM conducts assessments of and addresses manufacturing readiness at formal technical and milestone reviews. Refer to the *DoD Manufacturing Readiness Level (MRL) Deskbook* for more information.

5.4.21. Reliability and Maintainability Engineering. The Chief Engineer and PSM, in support of the PM, develops a reliability and maintainability program using an appropriate strategy to ensure reliability and maintainability requirements are understood, designed, produced, maintained, and improved. Refer to *DoD Guide for Achieving Reliability, Availability, and Maintainability* and the *DoD Reliability, Availability, Maintainability, and Cost Rationale Report Manual*; Government Electronics and Information Technology Association GEIA-STD-0009, *Reliability Program Standard for Systems Design, Development, and Manufacturing*; and SAE TA-HB-0009A, *Reliability Program Handbook* for additional information. The Reliability, Availability, Maintainability, and Cost (RAM-C) Report documents the rationale behind the development and balancing of sustainment requirements.

5.4.21.1. The PM will emphasize key reliability practices when planning and executing. **(T-1)**

5.4.21.1.1. The PM conducts an analysis of the lead and using command(s) reliability and maintainability requirements and flow them into the system specification and appropriate contractual requirements. **(T-1)**

5.4.21.1.2. The PM will leverage reliability engineering early. **(T-1)**

5.4.21.1.3. The PM will establish realistic reliability requirements. **(T-1)**

5.4.21.1.4. The PM will employ reliability engineering activities to improve a system's design throughout development. **(T-1)**

5.4.21.2. The PM includes a RAM-C Report in the SEP at Milestone A, updates it to support the RFP pre-release review at Milestones B and C, and documents the reliability growth strategy with reliability growth curve in the SEP in accordance with DoDI 5000.88.

5.4.21.3. The PM documents the reliability growth curve and associated verification methods for RAM-C requirements in the TEMP.

5.4.21.4. Post-Milestone C. The PM reviews maintenance data documentation, deficiency reports, and modification proposals to determine if overall system reliability and maintainability is affected and may require product improvement. This review should occur for modifications, mishaps, or as part of LCSP updates and involve the lead command, applicable product support teams, and supply chain management teams to ensure deficiencies are identified and corrected.

5.4.21.5. The PM ensures Reliability Centered Maintenance Analysis or similar data-driven analysis processes are employed throughout the life cycle to determine proper balance of planned and unplanned maintenance, and to establish effective failure management strategies. See DoD 4151.22-M, *Reliability Centered Maintenance (RCM)*, for more details.

5.4.21.5.1. The PM applies Condition-Based Maintenance Plus (CBM+) to improve the reliability and maintenance effectiveness of DoD systems and components. See DoDI 4151.22 for more details.

5.4.21.5.2. The PM includes CBM+ in the selection of maintenance concepts, technologies, and processes for all new weapon systems, equipment, and materiel programs based on readiness requirements, life cycle cost goals, and RCM-based functional analysis.

5.4.21.5.3. The PM implements CBM+ on existing programs where technically feasible and beneficial.

5.4.22. SEEK EAGLE Certification. Aircraft program managers provide SEEK EAGLE certifications to assure the safe and acceptable carriage and release (employment and jettison), safe escape, and ballistics accuracy (when applicable) for all stores in specified loading configurations on AF and FMS aircraft. The term “store” means any device (1) intended for external or internal carriage, (2) mounted at aircraft suspension point locations, and (3) which may or may not be intended for release from the aircraft. SEEK EAGLE certifications are based on engineering analyses, computer modeling and simulations, ground testing and flight testing. Use this certification data to update and verify the accuracy of operational flight programs and TOs. The AF SEEK EAGLE Office is the center of expertise for aircraft-stores compatibility activities. SAF/AQ has designated the SEEK EAGLE Office as the primary source for SEEK EAGLE certification technical support and it is the central repository for SEEK EAGLE data. Additional information on the overall SEEK EAGLE process, including detailed procedures on requesting support from the AF SEEK EAGLE Office, memorandum of agreement (MOA) templates, stores certification data package templates, typical funding source assignments, technical information request forms, and dispute resolution procedures are in AFPAM 63-129, Chapter 3, “The SEEK EAGLE Process and Resources.”

5.4.22.1. The aircraft program manager, supported by the Chief Engineer, provides SEEK EAGLE certification of any aircraft-store combination prior to its first use in flight by all Regular AF, Air National Guard, or AF Reserve operational units or test organizations unless waived by the MDA.

5.4.22.1.1. Unless waived by the PEO, the aircraft PM uses the Air Force SEEK EAGLE Office’s engineering services, facilities, and capabilities as the primary technical resources to support SEEK EAGLE certifications. The PM secures AF SEEK EAGLE Office support by negotiating a MOA which is tailored to the unique operational capability requirements of the program and the AF SEEK EAGLE Office capabilities to meet those requirements. For developmental aircraft, the MOA is signed no later than Milestone B unless waived by the MDA and updated by the end of Engineering and Manufacturing Development. The MOA remains in effect for the life of the program and be modified as required. Information on the MOA process can be found in AFPAM 63-129. If the PEO waives use of the AF SEEK EAGLE Office, the PM will notify the AF SEEK EAGLE Office when the waiver is granted and provide all program office-developed certification data to the AF SEEK EAGLE Office central data repository. **(T-2)**

5.4.22.1.2. Air Combat Command, as the lead command and requirements owner in collaboration with AF Global Strike Command and the AF SEEK EAGLE Office Director, is the final authority for assigning SEEK EAGLE Request Priority. Disagreements are resolved at the lowest level practical. When resolution cannot be reached in a timely manner, SAF/AQP will resolve the issue.

5.4.22.1.3. The aircraft or store program of record in development is responsible for all costs associated with SEEK EAGLE requirements, including stores needed for flight testing. The Air Force SEEK EAGLE Office is responsible for costs to execute SEEK EAGLE support for USAF programs in production and to provide a baseline capacity of technical expertise, modeling, and simulation tools, known flight and wind tunnel testing, and SEEK EAGLE resources available for USAF programs. It is the responsibility of the aircraft or store manager to fund all other activities such as TO publication and operational flight program updates. See AFPAM 63-129 for additional information.

5.4.22.1.4. The aircraft PM applies the DoD standardized procedures in MIL-HDBK-1763, *Aircraft/Stores Compatibility: Systems Engineering Data Requirements and Test Procedures*, for the certification of stores on aircraft; waivable by the MDA. MIL-HDBK-244A, *Guide to Aircraft/Stores Compatibility*, provides guidance on evaluating the safety and acceptability of store-aircraft combinations.

5.4.22.2. Store PMs produce a SEEK EAGLE store certification data package for each store that they manage and provide a copy of the package to the aircraft PM and the AF SEEK EAGLE Office. **(T-2)** AF Nuclear Weapons Center (AFNWC) provides statements of nuclear compatibility and certification completion to the SEEK EAGLE office. **(T-1)** See the Store Certification Data Package Template at Attachment 5 of AFPAM 63-129. In addition, store PMs:

5.4.22.2.1. Provide an updated certification data package prior to releasing a new or modified store for test or operation.

5.4.22.2.2. Support the aircraft PMs aircraft-store combination SEEK EAGLE certification.

5.4.22.2.3. Notify the lead and using commands, aircraft PM, and AF SEEK EAGLE Office of store service life changes that require re-certification.

5.4.22.3. Aircraft operators and crew do not load or use any store on an aircraft that does not have a specific SEEK EAGLE certification for that loading location from the aircraft program manager. **(T-1)** Contact the program manager and the AF SEEK EAGLE Office to request the required SEEK EAGLE certification. See AFPAM 63-129 for additional procedures and resources for SEEK EAGLE Requests.

5.4.22.4. SEEK EAGLE certifications for unique FMS aircraft-stores combinations may be requested by international customers through the AF Security Assistance and Cooperation (AFSAC) Directorate and may be fulfilled on a negotiated, reimbursable basis. See AFPAM 63-129 for additional procedures and resources for FMS SEEK EAGLE Requests.

5.4.22.5. Analyses and data from the SEEK EAGLE certification can support the aircraft's airworthiness approval, as required by DAFI 62-601. PMs should integrate SEEK EAGLE engineering analysis and testing activities with DAF airworthiness processes to achieve cost and schedule savings.

5.4.23. Software Engineering. System engineering manages system development and sustainment by addressing each system as having three major components: hardware, software, and human. The PM ensures key software focus areas are addressed throughout the life cycle. For focus areas and software best practices refer to the *DoD Enterprise DevSecOps Strategy Guide*, the *DoD Enterprise DevSecOps Fundamentals*, and the *DoD Enterprise DevSecOps Reference Design* (**https://dodcio.defense.gov/library/**). Focus areas can be tailored and incorporated in the System Engineering Plan, or Acquisition Strategy. The PM ensures that software assurance and software safety principles are addressed throughout the life cycle, documented in the PPP, DoDI 5000.83_DAFI 63-113, and applies open systems architecture principles to software to the maximum extent practicable. Refer to the *Joint Software Systems Safety Engineering Handbook*, MIL-STD-882E and the DoD SWAP report (**https://media.defense.gov/2019/May/01/2002126690/-1/-1/0/SWAP%20EXECUTIVE%20SUMMARY.PDF**) for more information. If the Software Resources Data Report is required, the PM uses the Cost and Software Data Reporting system to submit the report. **(T-0)** Refer to DoDI 5000.73 for more information.

5.4.24. Spectrum Management. Spectrum management is the planning, coordinating, and managing of the joint use of the electromagnetic spectrum through operational, engineering, and administrative procedures. The PM of systems using or impacting the electromagnetic spectrum is responsible for obtaining spectrum certification to comply with national and international laws as well as established treaties. Reference DoDI 4630.09, *Communications Waveform Management and Standardization*, DoDI 4650.01, *Policy and Procedures for Management and Use of the Electromagnetic Spectrum*, DAFI 17-220, *Spectrum Management*, for additional information and definitions of spectrum management terms.

5.4.24.1. The PM addresses spectrum supportability and requirements as early as possible in the acquisition life cycle to mitigate programmatic risk but no later than Milestone B.

5.4.24.2. The PM ensures system documents (including contract deliverables) properly address characteristics required by the equipment spectrum certification process described in AFI 17-220.

5.4.24.3. The Chief Engineer, in support of the PM, ensures electronic and electrical systems, subsystems, and equipment, including ordnance, procured for U.S. forces are mutually compatible in the operational electromagnetic environment in accordance with DoDI 3222.03, *DoD Electromagnetic Environmental Effects (E3) Program*. **(T-0)**

5.4.25. Standardization. Refer to AFI 60-101. The PM utilizes non-governmental consensus standards, if available, when identifying compliance documents in contracts. The Defense Standardization Council supports development of non-government consensus standards with DoD participation and use of those standards that meet DoD's requirements; these documents can enable program office success. This is the case with the following standards mentioned previously: EIA-649-1, IEEE-15288.1, IEEE-15288.2, and SAE-AS6500.

5.4.26. Supportability. See **Chapter 7**.

5.4.27. System Survivability & Susceptibility. System survivability includes protection from kinetic and non-kinetic fires, initial nuclear effects (including electromagnetic pulse), chemical, biological, and radiological contamination, cyber-attacks, and natural environments (i.e., solar flares, extreme temperatures, salt water, etc.). Survivability requirements apply to all programs including those utilizing commercial off the shelf or non-developmental item.

5.4.27.1. The PM addresses system survivability requirements and performance attributes across the life cycle.

5.4.27.2. The PM ensures system survivability design, test, and analysis activities are based on a system operations concept and threat assessments.

5.4.27.3. The PM implements a Hardness Maintenance and Hardness Surveillance program if a system requires hardening to survive against nuclear, ballistic, chemical, biological, high-power microwave, or laser threats. The program considers High Altitude Electromagnetic Pulse protection of mission-essential Nuclear Command, Control, Communications (NC3) systems. Methods are applied to verify that the High-Altitude Electromagnetic Pulse protection for the system and facility integration meets requirements listed in survivability policy. Procedures and plans should include materials, methods, and devices required to design, construct, test, and maintain High Altitude Electromagnetic Pulse protection from initial conception to deactivation of a fixed facility.

5.4.27.4. The PM implements survivability policy and guidance found in:

5.4.27.4.1. Section 141 of Public Law 108-375, *Development of Deployable Systems to Include Consideration of Force Protection in Asymmetric Threat Environment.*

5.4.27.4.2. 10 USC Section 4142, *Major systems and munitions programs: survivability testing and lethality testing required before full-scale production.*

5.4.27.4.3. Allied Engineering Publication (AEP)-7, *Chemical, Biological, Radiological, and Nuclear (CBRN) Contamination Survivability Factors in the Design, Testing and Acceptance of Military Equipment*.

5.4.27.4.4. MIL-STD 3056, *Design Criteria for Chemical, Biological, and Radiological System Contamination Survivability*.

5.4.27.4.5. 50 USC Section 1522, *Conduct of Chemical and Biological Defense Program*.

5.4.27.4.6. DoDI 3150.09.

5.4.27.4.7. DoDI 3222.03.

5.4.27.4.8. AFI 10-2607, *Chemical, Biological, Radiological, and Nuclear Survivability*.

5.4.27.4.9. MIL-HDBK-237C, *Electromagnetic Environmental Effects and Spectrum Certification Guidance for the Acquisition Process*.

5.4.27.4.10. MIL-STD-188-125-1, *High-Altitude Electromagnetic Pulse Protection for Ground-Based C41 Facilities Performing Critical, Time Urgent Missions*.

5.4.27.4.11. MIL-STD- 188-125-2, *High-Altitude Electromagnetic Pulse Protection for Transportable Systems*.

5.4.27.4.12. MIL-STD-3023, *High-Altitude Electromagnetic Pulse Protection for Military Aircraft*.

5.4.27.4.13. MIL-HDBK-423, *High-Altitude Electromagnetic Pulse (HEMP) Protection for Fixed and Transportable Ground – Based C4 1 Facilities – Volume 1 – Fixed Facilities*.

5.4.27.5. Meteorological Analysis. Meteorological analysis is used to identify and mitigate the impacts of the natural environment, to include the space environment, on a system's performance and employment for the life cycle of any weather-sensitive programs or basing activities. The PM and Chief Engineer, in collaboration with the implementing command's designated meteorologists, ensure the identification and documentation of a system's operational requirements for weather products and services, and assessment of weather-related risk during all phases of the life cycle, as appropriate.

5.4.28. Program Protection. See **Chapter 6.**

5.4.29. Hardware and Software Assurance. See **Chapter 6.**

5.4.30. Criticality of Program, Components, and Information. See **Chapter 6**.

# Chapter 6

# PROGRAM PROTECTION

**6.1. Program Protection Overview.** Program protection is a multi-functional activity to plan for and integrate holistic security policies and practices for DAF programs throughout their life cycles. **Note**: Use of the term programs in this chapter is not meant to limit application to acquisition category programs, it may be applied to systems, sub-systems, projects, or other acquisition activities.

6.1.1. Program protection helps ensure that all programs, regardless of pathway or categorization, consider life cycle risk management and execute to protect from a spectrum of threats in order to ensure battlefield advantage and mission assurance, including cyber-related threats, counterfeit hardware or software components, information exfiltration, unauthorized or indiscriminate information disclosure, and tampering efforts should components fall outside positive physical control. Security elements and considerations are included and consistent across a program's documentation (e.g., SEP, TEMP, LCSP). See the *DAF Systems Security Engineering Cyber Guidebook*, for additional information and guidance.

6.1.2. Security-related requirements are fully derived for the system and for supporting infrastructure. Security-related requirements are integrated into overall requirements, incorporated into the system's design through systems security engineering, and thoroughly tested from a mission assurance perspective.

6.1.3. Security-related requirements are included in the RFP and contract language, and in source selection criteria, where appropriate. Requirements should include security considerations at prime and subcontractor locations, proper security surrounding development networks as well as evidence for a secure supply chain (e.g., statistical part inspections, facility inspection results, network certifications).

6.1.4. Completed PPPs are included in the Systems Engineering Plan then transferred to the LCSP when a program transitions into the O&M phase. The PM and PSM ensure Product Support Providers identified in the LCSP are fully informed of their responsibilities.

6.1.5. Additional guidance and detailed requirements are provided in DoDI 5000.83_DAFI 63-113.

**6.2. Program Protection Planning.** The PM ensures critical program information and mission-critical functions and components are protected to keep technological advantages in and malicious content out.

6.2.1. The PPP is approved by the MDA. Refer to DoDI 5000.83_DAFI 63-113 for more information on PPP preparation and approval. The Chief Engineer completes a PPP and the PM ensures that it is maintained throughout the life cycle of the program**. (T-0)** When a technology development activity transfers to a program or the system has a major modification, the PM becomes responsible for security impacts of the change and documents them in their program's PPP. **(T-0)** An approved Program Protection Plan is also included as supporting documentation in the attachment section of the Information Support Plan.

6.2.1.1. PPP requirements for modifications can be satisfied by updating or annexing the existing plan, or by creating a separate PPP for the modification.

6.2.1.2. The PM creates and records an audit and inspection plan periodically as part of the PPP. PM will notify the MDA or decision authority, and appropriate Approving Official or Authorizing Official, of any findings or updates that involve significant high risks that cannot be reasonably addressed through technical mitigation, countermeasures, or risk management procedures and document them in the PPP. **(T-0)** The PPP outlines program implementation and should be updated as needed. As a best practice, review the PPP annually or congruent with LCSP updates.

6.2.2. NSS as defined in 44 USC 3552(b)(6), 44 USC 3553(e)(2) and 44 USC 3553(e)(3). Program protection and cybersecurity is emphasized in EO 14028, *Improving the Nation's Cybersecurity*, and National Security Memorandum 8 on *Improving the Cybersecurity of National Security, Department of Defense, and Intelligence Community Systems*. These documents clarify NSS criteria for making NSS determination. Program managers should start their NSS assessment process with the assumption that they are an NSS, then through analysis and identification determine that they are not an NSS. This will allow them to control and manage design and program requirements of their system or program early in the program planning process. This approach will also prevent the reactive and more expensive process of having to bolt-on system security after system design and implementation have started and program budgets have been baselined to support NSS implementation into their system or program. A new item that is added to program protection is NSS determination using the NSS determination checklist. In the interim, the checklist at **Figure A4.1** should be used and submitted for review, approval, and tracking in accordance with **Attachment 4**.

## 6.3. Communications Security (COMSEC).

6.3.1. COMSEC countermeasures are developed, implemented, and managed consistent with DoDI 5220.22, *National Industrial Security Program*; DoDI 8500.01; DoDI 8520.03; 32 CFR, Part 117, *National Industrial Security Program Operating Manual (NISPOM)*; DoDM 5220.32, Volume 1, *National Industrial Security Program: Industrial Security Procedures for Government Activities*; DoDM 5220.32, Volume 2; DAFI 16-1401, *Information Protection Program*; and DoDM 5220.22V2_AFMAN16-1406V2, *National Industrial Security Program: Industrial Security Procedures for Government Activities*.

6.3.2. PMs are required to coordinate and receive approval from AFLCMC/HNC prior to any COMSEC/CCI development, acquisition, modernization, or sustainment. Non-compliance will be reported to the PEO for Command, Control, Communications, Intelligence, and Networks Directorate (AFLCMC/HN), with a copy of the final action to the SAF/AQ Military Deputy and the SAF/SQ Military Deputy (for space systems and programs), within 30 days.

## 6.4. Anti-Tamper.

6.4.1. The PEO identifies an Anti-Tamper Lead to coordinate with the AF Anti-Tamper Service Lead (SAF/AQL and SAF/SQXL for space systems and programs) and to guide programs through the anti-tamper planning process. Reference DoDI 5000.83_DAFI 63-113 for more information.

6.4.2. The PM includes anti-tamper plans and anti-tamper waivers as an appendix in the PPP.

6.4.3. The PM implements anti-tamper countermeasures, where appropriate, consistent with DoDI 2010.06, DoDI 5200.39, DoDI 5200.44, 32 CFR, Part 117, DoDM 5220.32 V1 and DoDM 5220.32 V2. When applying DoD horizontal protection guidance, programs should consider how they implement anti-tampering.

**6.5. Operations Security (OPSEC).**

6.5.1. The PM ensures OPSEC is planned for and addressed during all acquisition phases. The goal of OPSEC is to protect proprietary information; controlled unclassified information; intellectual property; controlled technical information and/or classified information. This plan also defines indicators or operational profiles throughout the acquisition life cycle. An OPSEC plan can be part of the countermeasures listed in the PPP or a separate document. It is the responsibility of the PM to determine what measures are essential to protect critical and Sensitive information.

6.5.2. The PM should identify OPSEC measures in the acquisition/ systems requirements documents when possible and passed to resulting solicitations and contracts. Refer to DoDM 5205.02, *DoD Operations Security (OPSEC) Program Manual*, and AFI 10-701, *Operations Security (OPSEC),* for more information.

**6.6. Counterintelligence.** In accordance with DoDI 5200.44, the PM will request counterintelligence (CI) assessments of supplier threats to critical components through the implementing command's TSN's focal point. PMs also coordinate with the implementing command's intelligence focal point to determine the need for counterintelligence. If required, the PM collaborates with the applicable AF Office of Special Investigation field detachment or MAJCOM-supporting OSI Regional office regarding counterintelligence options and support for the life cycle of the system or technology, to include support to the development of a supporting Counterintelligence Support Plan to the PPP.

**6.7. Foreign Intelligence.** The Under Secretary of Defense for Intelligence and Security (USD(I&S)) is responsible to guide collection and direct all-source analysis, in accordance with DoDI 5200.44, *Protection of Mission Critical Functions to Achieve Trusted Systems and Networks*. PM's should leverage their Director of Intelligence (DOI) or their intelligence functional as the fusion point for Foreign Intelligence (FI) threat assessment products with intent to leverage a common publication platform to serve as a SCRM central repository.

**6.8. System Security Engineering.** An element of systems engineering that applies scientific and engineering principles to identify security vulnerabilities and minimize or contain risks associated with these vulnerabilities. The PM, in collaboration with the Chief Engineer, tailors the system engineering technical and management processes to address security related vulnerabilities and protection measures. See the *DAF Systems Security Engineering Cyber Guidebook* (**https://www.my.af.mil/gcss-af/USAF/ep/globalTab.do?channelPageId=sE3494DD05DD7CCA3015DEBE7E0B50426**).

**6.9. Trusted Systems and Networks.** The PM ensures that mission critical functions and critical components are identified and properly documented in the PPP, with risk assessment and mitigation. In accordance with DoDI 5200.44, responsibilities extend throughout the life cycle and the PM re-evaluates critical components when there are program changes in system design, modifications, or supply chain changes including spare or replacement parts. **Note**: Human-in-loop system of systems are generally evolving over time to automate certain workflow operations. These automated tasks to support certain mission essential functions may become mission critical functions due to lack of alternative means.

**6.10. Acquisition Security.** Acquisition Security is a key element of program protection for the planning and integration of all security disciplines and other defensive methods into the acquisition process to protect weapons systems and related sensitive technology, technical information such as research data with military applications, and support systems from foreign intelligence collection, unauthorized disclosure, sabotage, theft, or damage throughout a system's life cycle. Reference DoDI 5000.83_DAFI 63-113 for additional guidance and detailed requirements.

**6.11. Cybersecurity.** Cybersecurity is the prevention of damage to, protection of, and restoration of computers, electronic communications systems, electronic communications services, wire communication, and electronic communication, including information contained therein, to ensure its availability, integrity, authentication, confidentiality, and nonrepudiation. See DoDI 8500.01, DoDI 8510.01, AFPD 17-1, AFI 17-130, AFPD 14-4, AFI 17-101 and AFMAN 14-403 for more information.

6.11.1. The PM is responsible for ensuring programs develop and implement a Cybersecurity Strategy consistent with DoDI 5000.85, DoDI 5000.90, DoDI 8500.01, DoDI 8510.01, and include the Cybersecurity Strategy as an appendix to the PPP throughout the system life cycle. The Cybersecurity Strategy is approved by the applicable CIO (DAF and/or DoD), or Chief ISR Information Officer, depending on the type of program, prior to milestone decisions or contract awards and is required for every milestone review beginning at Milestone A.

6.11.2. Cyber T&E. Cyber T&E must be included in program TEMP. The TEMP should build upon the program Cybersecurity Strategy and provide detailed T&E activities to support cyber-T&E requirements. See DoDI 5000.89_DAFI 99-103 for more information on cyber-T&E.

**6.12. Nuclear Systems Security.** Refer to DoDI 5000.83_DAFI 63-113 for requirements on this topic.

**6.13. Physical Security.** The PM ensures that program-related facilities (government, including government owned, contractor operated, and contractor) have physical security attributes commensurate with program information and system characteristics, to include controlled unclassified information, consistent with DoDI 5200.08, *Security of DoD Installations and Resources and the DoD Physical Security Review Board (PSRB)*; DoDI 5205.11; DoDM5200.01 V3_DAFMAN16-1404 V3, *Information Security Program: Protection of Classified Information*; 32 CFR, Part 117; AFMAN 31-101, Vol. 1, *Integrated Defense (ID) Planning*; AFI 16-701; and DoDM 5220.22 V2_AFMAN 16-1406 V2. The PM ensures that physical security requirements are included in RFPs and final contracts, to include adequate provisions for sub-contractors and program asset protection at DAF-owned industrial facilities.

6.13.1. The PM identifies physical protection standards for weapon system platforms in post-production, test and government acceptance until the asset is physically removed from the industrial property.

6.13.2. Minimum protection standards for produced weapon system platforms will meet the intent of AFMAN 31-101, Vol. 1, unless otherwise identified by the lead command.

6.13.3. When there is reasonable risk to a program or mission from a threat in proximity caused by the foreign acquisition of land, equipment, or services (e.g., a foreign acquirer buying solar panel farms or commercial rights close to a DAF test range), the nearest AF OSI field unit and the DAF CFIUS office (**usaf.pentagon.saf-aq.list.usaf-cfius@mail.mil**) must be informed. **(T-1)**

**6.14. Supply Chain Risk Management.** Supply chain risk management is the systematic process for managing risk by identifying, assessing, and mitigating actual or potential threats, vulnerabilities, and disruptions to the DAF supply chain from beginning to end to ensure mission effectiveness. Supply chain risk management involves the identification, assessment, and mitigation of threats to the supply chain as it relates to the life cycle of mission-critical products, materials, and services. Successful supply chain risk management addresses the broad spectrum of supply chain risks that have the potential to jeopardize the integrity of assets, compromise IP, disrupt the flow of crucial goods or services needed for continued DAF operations, or drive materiel cost increases to the program. Supply chain risk management requires enterprise cross-functional unity of effort and combined integrated threat-informed analysis between CI and intelligence presented to the PM across all stages of the acquisition life cycle. See DoDI 5000.83_DAFI 63-113 for more information on supply chain risk management.

**6.15. Cyber-Supply Chain Risk Management.** Cyber-Supply Chain Risk Management is the process of identifying, assessing, and responding to risks associated with the distributed and interconnected nature of information, communications, and operational technology product and service supply chains. With the increasing threats to DAF assets that expose vulnerabilities of DAF assets on cyber systems, cyber threats and their mitigations are reviewed and tracked using open source and reported incidences from intelligence organizations in the DAF with information of known cyber and TSN threats. Assessments and mitigations are made by DAF experts from SAF/AQ, SAF/SQ (for space systems and programs), SAF/CN, CROWS, and the TSN COE. Specific information that applies to program and systems should be documented in the program's Cybersecurity Strategy, which is part of the PPP for review and approval.

# Chapter 7

# PRODUCT SUPPORT

**7.1. Product Support and Sustainment Planning Overview.** Product support is a continuous and collaborative set of activities that establishes and maintains readiness and the operational capability of a system, subsystem, or end-item throughout its life cycle. A product support strategy is built around the integrated product support elements as identified in the *DoD PSM Guidebook* to integrate the phases of a system throughout its life cycle. The product support strategy is the business and technical approach to design, acquire, test and field the product support package to execute the sustainment strategy. It begins as a broad concept and evolves into a detailed implementation plan that is documented in the LCSP.

7.1.1. The PM retains overall responsibility for all aspects of the program. The PSM is accountable to the PM for the execution of all product support needs, to include integrity programs, within the PM's scope of responsibilities. The PSM, with support from the implementing command, develops and implements a comprehensive product support strategy for each applicable program. For more information on PSM and product support responsibilities refer to the DoDI 5000.91, *Product Support Management for the Adaptive Acquisition Framework*, *DoD PSM Guidebook*, *Integrated Product Support Element Guidebook*, MIL-HDBK-502A, *Product Support Analysis*, and 10 USC Section 4324, *Life-Cycle Management and Product Support*.

7.1.2. The PSM ensures the appropriate concepts, techniques, and analyses necessary to ensure achievement of defined product support requirements and objectives are applied. The PSM is responsible to the PM to ensure that integrated product support objectives are considered and introduced as early as practical in the life cycle.

**7.2. Product Support Business Model.** The Product Support Business Model defines the hierarchical framework in which the planning, development, implementation, management, and execution of product support for a weapon system component, subsystem, or system platform will be accomplished over the life cycle. The Product Support Business Model is documented in the LCSP. It describes the program's methodology to achieve optimized product support by balancing weapon system availability with affordable and predictable total ownership cost. The PM has substantial discretion in implementing the Product Support Business Model by developing performance-based agreements with warfighter/users, Product Support Integrators, and Product Support Providers.

7.2.1. Product Support Integrators. The Product Support Integrator is defined as an entity (within or outside the Federal Government) charged with integrating all sources of product support, both private and public, defined within the scope of a product support arrangement. The PSM may have more than one Product Support Integrator supporting the Program.

7.2.2. Product Support Providers. A Product Support Provider is an entity that provides product support functions. A Product Support Provider may be an entity within the DoD, an entity within the private sector, or a partnership between such entities.

**7.3. Weapon System Sustainment.** Weapon System Sustainment is a subset of Readiness and Operation and Support funding that includes CLS, Contractor Inventory Control Point, Depot Purchased Equipment Maintenance, Sustaining Engineering, TOs and organic maintenance, repair and overhaul. Depot level repairables and consumables for organically managed aircraft and the Flying Hour Program are excluded from Weapon System Sustainment. Weapon System Sustainment costs should be balanced with readiness needs and addressed as part of the product support strategy.

**7.4. Centralized Asset Management (CAM).** CAM is the management and execution of sustainment funding for the USAF process owner. AFMC is the designated USAF Weapon System Sustainment (WSS) Executive Agent. SSC is the designated USSF WSS Executive Agent. Air National Guard and AF Reserve Command utilize CAM processes and schedules but manage their own requirements validation and execution of funds.

7.4.1. MAJCOM/FLDCOMs and the PM utilize CAM procedures, meet established timeframes/suspense, and support associated reviews as documented in AFMAN 63-143, *Centralized Asset Management Procedures*.

7.4.2. MAJCOM/FLDCOMs and the PM utilize the CAM IT system of record for defining, validating, prioritizing, and publishing system sustainment requirements at the depot.

7.4.3. MAJCOM/FLDCOM s and the PM collaborate with HQ AFMC to advocate and ensure all requirements associated with systems' support receive equitable consideration under CAM.

**7.5. Product Support Strategy.** The purpose of the product support strategy is to outline the program's overarching strategy to satisfy product support requirements. All programs, regardless of acquisition pathway, are required to develop and implement a comprehensive product support strategy in support of the PM's integrated program objectives. The product support strategy documented in the LSCP is based upon a best value selection among organic and commercial support alternatives as validated through the PS-BCA process and seeks to minimize life cycle costs.

7.5.1. Product support considerations begin prior to Milestone A (or equivalent) with early requirements determination and continue through system design, development, operational use, retirement, and disposal. The Program Manager, in conjunction with the Product Support Manager, should assess system design, design changes, integrated digital environments, DevSecOps approaches and sustainment strategies to identify factors impacting future Operating and Support costs throughout these phases and develop strategies for reducing cost growth on the program.

7.5.2. Performance based life cycle product support or Performance Based Logistics strategies are to be employed when analysis indicates that they can effectively reduce cost and improve performance.

7.5.3. The PSM adjusts performance requirements and resource allocations across Product Support Integrators and Product Support Providers as needed to implement the product support strategy. The PSM is responsible for optimizing product support during the development, implementation, sustainment and subsequent revalidation of the product support strategy.

**7.6. Product Support Business Case Analysis.** The PSM performs and documents the best value comparisons in a PS-BCA, in support of the PMs integrated program objectives, to validate the product support strategy is cost effective, financially feasible, optimizes system readiness and manages risk, in accordance with 10 USC Section 4324.

7.6.1. The PS-BCA varies in size, scope, and level of detail depending on many factors, such as fleet size, projected program life cycle, and depot statutory requirements. The PS-BCA uses a structured methodology to aid decision making by identifying and comparing alternatives by examining the mission and business impacts (both financial and non- financial), risks, and sensitivities. In order to properly size and scope the PS-BCA, the PSM and PM must completely understand the appropriate level of analysis required to support the MDA's decision making and tailor the PS-BCA accordingly.

7.6.2. The PS-BCA is supported by a team comprised of program management, life cycle logistics, financial management, cost estimation, small business, supply chain, and depot sustainment personnel who can assist the PSM in completing the PS-BCA. The PSM conducts the PS-BCA using government personnel to the maximum extent possible. Refer to AFI 65-501, *Economic Analysis*, DAFPAM 63-123, *Product Support Business Case Analysis*, and the *DoD Product Support Business Case Analysis Guidebook* for more information on PS-BCA.

7.6.3. MCA programs at the ACAT I and ACAT II levels are required to accomplish a PS-BCA. For ACAT III programs, the MDA has the discretion to determine whether to conduct a PS-BCA; however, the MDA ensures rationale for not conducting PS-BCA is documented in the LCSP.

7.6.3.1. MTA programs that are "covered systems" (i.e., exceed the MDAP threshold) are required to accomplish a PS-BCA. The specific timing and content requirements are highly tailorable based on the specific needs of the program. Once the program transitions out of the MTA pathway, the program uses this PS-BCA as the baseline for further analysis or revalidation as appropriate.

7.6.3.2. Non-MCA programs and MTAs that are not covered systems are not required to accomplish a PS-BCA as described in the section.

7.6.4. The PS-BCA is an annex to the LCSP completed by the PM and initiated prior to Milestone B to support IP need analysis and completed by Milestone C (or equivalent). The PS-BCA is initiated and updated to justify the product support approach defined in the LCSP.

7.6.5. The PSM revalidates the PS-BCA at a minimum of every five years from the completion or revalidation date. For existing programs that are beyond Milestone-C and do not have a PS-BCA, the PSM is not required to conduct a PS-BCA unless a change to the product support strategy is being considered. The PSM documents the current product support strategy is affordable and effective, obtains SAF/AQD approval, in coordination with SAF/SQS coordination (for space systems and programs) for ACAT I and IA programs, and includes this determination as an annex to the LCSP.

7.6.6. SAF/AQD is the delegated approval authority for ACAT I and MTA (covered systems) PS-BCA and revalidations. The MDA is the approval authority for all other PS-BCAs.

7.6.7. The PSM is responsible to maintain a complete history of PS-BCA over the course of the system life cycle to track decisions and understand how real-world operations cause program impacts.

**7.7. Life Cycle Sustainment Plan.** The LCSP is the program's product support execution plan for ensuring the system's product support strategy optimizes the sustainment KPPs and KSAs while controlling overall program ownership costs. The LCSP is integrated across the system life cycle into strategies, planning, implementation, development, production, fielding, support, sustainment and disposal. The LCSP streamlines, consolidates, and makes visible to leadership all aspects of the program's product support strategy.

7.7.1. The PM develops a LCSP for all programs, regardless of acquisition pathway. See **paragraph 7.7.8** for additional requirements.

7.7.1.1. MCA programs develop, update, and obtain approval of LCSPs for Milestone A, B, C, Full Rate Production and every five years after IOC until system disposal.

7.7.1.2. MCA programs in the Operations and Support phase are required to have a LCSP unless the program's LCSP was approved prior to March 2013 and the MDA authority has been delegated to the SAE or below. The PM performs the appropriate level of analysis necessary to develop the product support strategy and support each milestone decision.

7.7.1.3. Non-MCA programs have greater flexibility to determine the appropriate timing for LCSP development, approval, and reviews. Non-MCA programs work with their Decision Authority to determine LCSP tailoring strategies, completion dates and update cycles.

7.7.1.4. The implementing command may also designate other efforts requiring the development of a LCSP.

7.7.1.5. The PM performs the appropriate level of analysis necessary to develop the product support strategy and support each milestone decision.

7.7.2. The PM updates the LCSP to reflect changes in the product support strategy, at major milestone reviews (or equivalent decision points for applicable pathways), or at five year intervals, whichever comes first.

7.7.2.1. The PM should develop and coordinate the LCSP in accordance with the OSD approved outline. Tailoring strategies ensure the information and coordination requirements of the LCSP are addressed in any integrated documentation.

7.7.2.2. Non-MCA programs use the OSD approved outline as a starting point for LCSP development. However, tailoring and adding content may be necessary for the program to develop an LCSP that sufficiently describes the program's product support strategy.

7.7.3. LCSPs pertaining to covered systems are subject to additional requirements (see 10 USC Section 4324). **(T-0)**

7.7.3.1. Covered systems are defined as MDAPs and MTAs that are estimated to require a total expenditure that exceeds the MDAP threshold. **(T-0)**

7.7.3.2. Prior to Milestone B (or the equivalent), covered systems are required to have a LCSP that has been approved by the MDA. **(T-0)**

7.7.3.3. PSMs will ensure the LCSP for a covered system includes the following items:

7.7.3.3.1. A comprehensive product support strategy. **(T-0)**

7.7.3.3.2. Performance goals, including key performance parameters for sustainment, key system attributes, and other appropriate metrics. **(T-0)**

7.7.3.3.3. An approved life cycle cost estimate. **(T-0)**

7.7.3.3.4. Affordability constraints and key cost factors that could affect the operating and support costs. **(T-0)**

7.7.3.3.5. Sustainment risks and proposed mitigation plans for such risks. **(T-0)**

7.7.3.3.6. Engineering and design considerations that support cost-effective sustainment. **(T-0)**

7.7.3.3.7. A technical data and intellectual property management plan for product support. **(T-0)**

7.7.3.3.8. Major maintenance and overhaul requirements that will be required during the life cycle. **(T-0)**

7.7.4. LCSP Approval and Concurrence.

7.7.4.1. For MCA programs, prior to IOC, ASD(S) is the approval authority for LCSPs on all ACAT ID, IAM, and USD(A&S)-designated special interest programs, and the MDA is the approval authority for all other LCSPs.

7.7.4.2. For MCA programs, after IOC, SAF/AQD (SAF/SQS, in coordination with SAF/AQD, for space systems and programs) is the delegated approval authority for LCSP on all ACAT I programs, and the MDA is the approval authority for all other LCSPs.

7.7.4.3. For MCA programs, the implementing command provides concurrence on the LCSP as the Sustainment Command. Authority to provide concurrence may be delegated to the appropriate level.

7.7.4.4. For non-MCA programs, the Decision Authority approves the LCSP.

7.7.5. LCSP Annexes. The PM is responsible for ensuring the following annexes are included in the LCSP:

7.7.5.1. PS-BCA or other analyses used to develop the product support strategy documented in the LCSP.

7.7.5.2. Engine Life Cycle Management Plan.

7.7.5.3. Core Logistics Analysis.

7.7.5.4. Preservation and Storage of Unique Tooling Plan (MDAP only).

7.7.5.5. IP Strategy (Milestone B, C, and subsequent LCSP updates, including major modification programs).

7.7.5.6. DSOR Determination(s).

7.7.5.7. Independent Logistics Assessment (ILA) (MDAP Only).

7.7.5.8. PPP (O&S phase only; included in SEP for pre-O&S programs).

7.7.5.9. IUID Implementation Plan after milestone C approval.

7.7.5.10. Demilitarization Plans.

7.7.5.11. Replaced System Support Plan.

7.7.5.12. Partnership Agreements.

7.7.5.13. TO Life Cycle Management Plan and TO Life Cycle Verification Plan.

7.7.5.14. Programmatic Environment, Safety, and Occupational Health Evaluation (O&S phase only; included in SEP for pre-O&S programs).

7.7.6. System modifications/upgrades may be added as a stand-alone annex to the platform LCSP. The annex addresses all standard LCSP requirements for that specific modification/upgrade. Upon completion of the modification/upgrade, the platform LCSP is updated to incorporate the changes. Each modification or upgrade should have a separate annex to the LCSP. See **Chapter 9** for more information.

7.7.7. For more information on the LCSP refer to the *DoD PSM Guidebook* and the *Integrated Product Support Element Guidebook*.

7.7.8. LCSPs pertaining to covered systems are subject to additional requirements (see 10 USC Section 4324). **(T-0)**

7.7.8.1. Covered systems are defined as MDAPs and MTAs that are estimated to require a total expenditure that exceeds the MDAP threshold. **(T-0)**

7.7.8.2. Prior to Milestone B (or the equivalent), covered systems are required to have a LCSP that has been approved by the MDA. **(T-0)**

7.7.8.3. PSMs will ensure the LCSP for a covered system includes the following items:

7.7.8.3.1. A comprehensive product support strategy. **(T-0)**

7.7.8.3.2. Performance goals, including KPPs for sustainment, KSAs, and other appropriate metrics. **(T-0)**

7.7.8.3.3. An approved life cycle cost estimate. **(T-0)**

7.7.8.3.4. Affordability constraints and key cost factors that could affect the operating and support costs. **(T-0)**

7.7.8.3.5. Sustainment risks and proposed mitigation plans for such risks. **(T-0)**

7.7.8.3.6. Engineering and design considerations that support cost-effective sustainment. **(T-0)**

7.7.8.3.7. A technical data and IP management plan for product support. **(T-0)**

7.7.8.3.8. Major maintenance and overhaul requirements that will be required during the life cycle. **(T-0)**

**7.8. Materiel Fielding.** Materiel fielding is the process by which DAF systems and equipment are delivered to and put into service by operational units in the field.

7.8.1. The PM develops and documents materiel fielding plans (MFP) starting at Milestone B and through the production and deployment phase. The PM coordinates materiel fielding schedules and plans with the lead or using command(s) and other stakeholder organizations interfacing with, or providing support (e.g., training) for the materiel being developed. It is at the PM's discretion how they document MFPs; they may be a stand-alone document known as a MFP, an annex to the program Acquisition Strategy or LCSP, or embedded within the Acquisition Strategy or LCSP.

7.8.2. At Milestone C and all subsequent production decision reviews, the PM updates the MFPs to reflect the materiel fielding-related requirements, or any changes in the user's system/product delivery and acceptance criteria, the user's operational/mission employment and the user's requirements to support operator and maintenance training (e.g., Required Assets Available), IOC, and FOC. MFPs address levels of maintenance, sources of repair, sustainment partnering relationships, source of supply, support equipment, training, and use of interim contractor support (ICS) or contractor logistics.

7.8.3. Consult DAFPAM 63-128 for additional guidance and information related to the materiel fielding process.

**7.9. Product Support and Logistics Assessments.**

7.9.1. Logistics Health Assessments. In order to self-inspect and reduce product support risk for all programs, the PM periodically assess program product support planning and performance using the Logistics Health Assessments assessment tool. PEOs determine the frequency of the periodic assessment.

7.9.2. Independent Logistics Assessments. PEOs are responsible for ensuring ILAs are conducted for all MDAP programs within their portfolios. ILAs are required prior to Milestone B, C, and the Full Rate Production decision (if more than 4 years after Milestone C). ILAs results are annexed to the LCSP.

7.9.2.1. PEOs tailor ILAs to program requirements using the Logistics Health Assessment criteria as a baseline for assessing the program. The ILAs:

7.9.2.1.1. Assesses the adequacy of the product support strategy (to include the core logistics analyses and establishment of organic capabilities).

7.9.2.1.2. Identifies system design and sustainment planning features that impact readiness and future O&S costs.

7.9.2.1.3. Identifies changes to system design that could reduce costs, and effective strategies for managing such costs.

7.9.2.1.4. Specifically assesses O&S costs to identify factors resulting in cost growth and provide strategies to reduce costs growth.

7.9.2.2. PEOs are delegated authority to charter ILAs teams and ensure they are conducted by a team comprised of logistics, program management, engineering, financial management, testing, contracting, small business, program protection, and business experts who are independent of the program office. "Independent" means a person outside the program office who is not active nor has recently been active in the management, design, test, production or product support planning of the program.

7.9.3. Sustainment Reviews. PEOs are responsible for conducting Sustainment Reviews for all major weapon systems not later than five years after declaration of IOC. **(T-0)** PEOs will conduct subsequent Sustainment Reviews every five years thereafter, in coordination with SAF/AQ or SAF/SQ. **(T-0)**

7.9.3.1. SAF/AQ or SAF/SQ will direct additional Sustainment Reviews using availability and reliability thresholds and cost estimates as the basis for the circumstances prompting a review.

7.9.3.2. The Sustainment Review includes, at minimum, the following elements:

7.9.3.2.1. An independent cost estimate for the remainder of the life cycle of the program.

7.9.3.2.2. A comparison of actual costs to the amount of funds budgeted and appropriated in the previous five years with an explanation of the impact on equipment availability when funding shortfalls exist.

7.9.3.2.3. A comparison between the assumed and the achieved system reliabilities.

7.9.3.2.4. An analysis of the most cost-effective source of repair and maintenance.

7.9.3.2.5. An evaluation of the cost of consumables and depot level repairables.

7.9.3.2.6. An evaluation of the cost of IT, networks, computer hardware, and software maintenance and upgrades.

7.9.3.2.7. As applicable, an assessment of actual fuel compared to projected fuel efficiencies as demonstrated in tests or operations.

7.9.3.2.8. As applicable, a comparison of actual manpower requirements to previous estimates.

7.9.3.2.9. An analysis of the completeness and accuracy of the data being reported in the military costs systems with a plan to correct deficiencies.

7.9.3.2.10. As applicable, information regarding any decision to restructure the LCSP for a covered system or any other action that will lead to operating and support cost growth.

7.9.3.3. PEOs document the results of the Sustainment Review in a memorandum and forward the memorandum along with supporting documentation to SAF/AQ or SAF/SQ for approval. The memorandum and supporting documentation are made available to USD(A&S) within 30 days after completion of the review.

7.9.3.4. If the Sustainment Review identified Critical Operating and Support Cost Growth, the PEO is required to develop a remediation plan to reduce operating and support costs or obtain SECAF certification that the cost growth is necessary to meet national security requirements. **(T-0)** Critical Operating and Support Cost Growth is defined as:

7.9.3.4.1. If the Sustainment Review Independent Cost Estimate (ICE) is at least 25 percent greater than the estimate documented in the most recent ICE. **(T-0)**

7.9.3.4.2. If the Sustainment Review ICE is at least 50 percent more than the estimate documented in the original Baseline Estimate. **(T-0)**

7.9.3.5. SAF/AQ or SAF/SQ approves all Sustainment Reviews conducted by the PEOs during the fiscal year. Not later than 30 September of each year, SAF/AQ or SAF/SQ submits all completed Sustainment Reviews to the congressional defense committees. **(T-0)**

**7.10. Sustainment Metrics.** The PM is responsible for ensuring sustainment metrics are collected, reported, and analyzed to measure program life cycle sustainment outcomes that satisfy the sustainment KPPs and KSAs defined by the user in accordance with the JCIDS Manual. Sustainment metric calculation information can be found in DAFPAM 63-128.

7.10.1. Materiel availability measures the percentage of the total inventory of a weapon system’s operational capability (ready for tasking) based on materiel condition for performing an assigned mission at a given time. Materiel availability information can be found in DAFPAM 63-128. Operational availability can be used in place of materiel availability in cases where the total inventory of a weapon system is required for operational use to perform an assigned mission at any given time.

7.10.2. Materiel reliability measures the probability a system will perform without failure over a specific interval. Materiel reliability information can be found in DAFPAM 63-128.

7.10.3. Total Ownership Cost measures total costs as identified in the OSD Cost Assessment and Program Evaluation O&S Cost Estimating Structure. Total ownership cost is measured in accordance with *OSD Cost Assessment and Program Evaluation Operating and Support Cost-Estimating Guide*.

7.10.4. Mean Down Time measures the average elapsed time between losing Mission Capability status and restoring the system to at least Partial Mission Capability status. Mean Down Time information can be found in DAFPAM 63-128.

**7.11. Depot Maintenance and Sustainment Cost Reporting.** Depot level maintenance applies to work performed by both government and contractor personnel. It includes all types of contractor support (CLS, contractor inventory control point, ICS, requirements contracts) and partnership arrangements (Workshare Agreements, Direct Sales Agreements, and contract work excluded under the terms of 10 USC Section 2474, *Centers of Industrial and Technical Excellence: Designation; Public-Private Partnerships*), regardless of the source and type of funding and where the work is performed.

7.11.1. The PM supports HQ AFMC, in accordance with AFMC developed procedures, by:

7.11.1.1. Tracking obligated depot maintenance funds for programs, regardless of the source of funds, for the purpose of reporting these obligations to AFMC.

7.11.1.2. Documenting rationale and methodology for tracking obligated depot maintenance funds.

7.11.1.3. Ensuring contracts for depot level maintenance include requirements to document and report funding.

7.11.2. To ensure compliance with 10 USC Section 2464 and 10 USC Section 2466, the PM is responsible for reflecting the DAF core and organic requirements in programmatic strategies and product sourcing documents throughout the program life cycle.

7.11.3. The PM working with the PCO is responsible for ensuring requirements for the Contractor Sustainment Report are included in all major contracts and subcontracts, regardless of contract type, valued at more than $50 million (then-year dollars). Reference DoDM 5000.04, *Cost and Software Data Reporting,* for additional detail.

**7.12. Depot Purchased Equipment Maintenance.** The Depot Purchased Equipment Maintenance Program provides a mechanism to collectively identify, plan, program, negotiate, and budget for depot-level maintenance services provided by organic DAF depots, depots of other Services, and contract repair sources. Refer to AFMAN 63-143 for detailed information on the Depot Purchased Equipment Maintenance Program.

**7.13. Depot Source of Repair.** The DSOR process is the method by which the DoD postures its depot level maintenance workloads: organic, contract, or a combination of both. It applies to workloads for hardware, software, new acquisitions, and fielded systems whether the Government or private contractor manages the system or subsystem. For fielded systems, the process is initiated as soon as a change in posture is considered. Refer to AFMAN 63-122, *Depot Source of Repair Planning and Activation,* for detailed process guidance.

7.13.1. The PM initiates DSOR planning early in the life cycle and documents DSOR planning in the LCSP. The PM considers requiring delivery of an iterative supportability analysis including a Level of Repair Analysis, a Maintenance Task Analysis, Failure Mode, Effects and Criticality Analysis (FMECA), and Failure Reporting and Corrective Action System (FRACAS) to better support depot maintenance activation activities if product support analysis deliverables are not developed or acquired elsewhere. Reference GEIA-STD-0007 for additional detail.

7.13.2. The PM ensures DSOR determinations for programs, systems, sub-systems, and end items are processed and approved through AFMC. The PM provides all required data needed to develop the DSOR to AFMC using the DSOR Automated Management System.

7.13.3. AFMC acts as the DAF executive manager for the DSOR process.

7.13.3.1. DSOR determinations for space programs, systems, sub-systems, and end items are routed through USSF prior to submission to AFMC.

7.13.4. The DSOR Determination Process is comprised of several activities, each tied to specific events in the acquisition life cycle.

7.13.4.1. The PM collaborates with AFMC to determine the core depot-level maintenance and repair requirements. This analysis is completed prior to Milestone A, and the results of the analysis are also documented in the Core Logistics Analysis Annex to the LCSP.

7.13.4.2. The DSOR is an estimate of requirements for core depot-level maintenance and repair capabilities, the associated logistics capabilities, and the sustaining workloads necessary to support these requirements. The DSOR is completed by Milestone B, and it identifies sources of repair for each depot level reparable at the system and sub-system level, at minimum, per AFMAN 63-122.

**7.14. Contractor Logistics Support.** The PM considers the use of CLS when developing and implementing a comprehensive product support strategy. Specific funding guidance cannot cover all contracts or situations; therefore, the PM, with assistance and advice from the Financial Management organization, must review each proposed contractual action as described in DAFMAN 65-605, Vol.1.

7.14.1. Contractor Inventory Control Point refers to the logistic support function where the contractor is assigned the primary responsibility for Integrated Materiel Management of peculiar items in support of DAF programs. Other supply chain management functions include requisition processing, storage, shipment, delivery, pick-up receiving, shipping, in-transit visibility/tracking/reporting, property accountability and handling of material. For additional guidance refer to DoDM 4140.01, Vol. 8, DoDI 5000.64_DAFI 23-111, AFI 23-101, and DAFMAN 23-119.

7.14.2. ICS is a temporary support method for an initial period of the operation of the system, equipment, or end-item. This strategy is utilized for controlling capital investment costs while design stability is being achieved and complex product support elements are being developed.

7.14.2.1. If ICS is planned, the PM ensures the Acquisition Strategy and LCSP include a plan for transition from ICS to the long-term product support strategy (organic or contract), as well as the beginning and ending dates of the ICS. ICS does not negate the PM's responsibility to achieve an organic, CLS or a Public-Private Partnership capability as early as practicable.

7.14.2.2. The lead and using command(s) plan and advocate for programming and budgeting for ICS cost and associated requirements for the sustainment of systems.

7.14.3. CLS requirements are programmed for and executed using the types of funds and funding level approved by the lead command or AF CAM Executive Agent, AFMC. The PM provides the lead command and AF CAM Executive Agent applicable copies of obligation documents and expense reports as agreed to or as stipulated by the AF CAM Executive Agent. The lead and using command(s) plan and advocate for programming and budgeting for their portions of the CLS costs and any associated requirements for the sustainment of systems. Reference DAFMAN 65-605, Vol.1, for more information.

7.14.4. CLS contracts are written based on characteristics for performance-based logistics. The PM establishes flexible performance and funding ranges commensurate with targets developed in conjunction with the lead command, industry partners, and other relevant agencies across the acquisition, logistics, and user communities. These contracts can link contract incentives to performance outcomes while allowing the DAF to make sound, enterprise-wide, capabilities-based resource decisions when deciding where to accept risk.

7.14.4.1. CLS contracts are crafted to identify ranges of outcome performance with thresholds and objectives and the target price (cost to the user) for each level of capability. The contract reflects normal operations and delineates any constraints or boundary conditions. CLS contracts should be flexible enough to address a range of support requirements to accommodate changes in operational tempo or execution year funding, including surge or contingency requirements to the extent they can be defined. If used, the PM documents the thresholds, objectives, and target price of the CLS contract in the LCSP.

7.14.4.2. The PM, in collaboration with stakeholders, identifies needed CLS requirements and makes provisions within regulation in the RFPs, Statements of Work, and contracts to ensure visibility of direct contractor costs for each type of support material and service being provided.

7.14.4.2.1. The PM implements contract data requirements for tracking and reporting of total program cost and breakout of depot-level maintenance contractor and organic costs.

7.14.4.2.2. The PM reports all CLS costs consistent with DAFMAN 65-605, Vol. 1. The PM ensures CFO reporting is submitted for CLS contract assets in the applicable Accountable Property System of Record in accordance with AFI 23-101.

7.14.4.2.3. The PM ensures compliance with Defense Logistics Management Standards transactional data reporting for CLS assets in the applicable Accountable Property System of Record in accordance with Defense Logistics Manual (DLM) 4000.25, Vol. 2 and DoDM 4140.01, Vol. 8.

7.14.5. The PM coordinates and obtains MAJCOM/FLDCOM agreement on unit, base, or MAJCOM/FLDCOM support requirements and ensures agreed-to support requirements are included in the CLS contract. Reference AFI 25-201, *Intra-Service, Intra-Agency, and Inter-Agency Support Agreement Procedures* for additional information.

7.14.6. The PM obtains AF Metrology and Calibration Program Group approval prior to contracting for commercial calibration services or when deviating from currently established calibration support plans in accordance with AFMAN 21-113.

7.14.7. The PM reviews the requirements in DoDI 3020.41 when making logistics sustainability decisions regarding contract support in contingency operations outside the United States.

7.14.8. CLS for commercial derivative/hybrid aircraft adheres to Federal Aviation Administration (FAA) maintenance standards, directives, and bulletins to the maximum extent practical for commercial derivative aircraft, in accordance with respective manufacturer's maintenance manuals, military technical manuals, approved maintenance concept, and the maintenance contract. For further information, see DAFI 21-101, *Aircraft and Equipment Maintenance Management* and DAFI 62-601, *Airworthiness*. Reference AFMAN 13-204, Vol. 3, *Air Traffic Control*, for requirements applicable to support for Air Traffic Control and Landing Systems.

7.14.9. When making a DSOR determination for FAA certificated commercial derivative/hybrid aircraft, organic DAF depot repair facilities are authorized to maintain and repair in accordance with FAA maintenance standards, directives, and bulletins to the maximum extent practical for commercial derivative aircraft, in accordance with respective manufacture's maintenance manuals, military technical manuals, and approved maintenance concepts. For further information, reference AFMAN 63-122, *Depot Source of Repair Planning and Activation*.

**7.15. Public-Private Partnerships.** Public-Private Partnerships are a logistics sustainment philosophy involving a cooperative agreement between a program office, DoD Center of Industrial and Technical Excellence, and private sector entities. The purpose of public-private partnerships is to leverage the optimal capabilities of both the public and private sectors in order to enhance product support to the warfighter/user. Public-Private Partnerships may be established in support of any of the integrated product support elements.

7.15.1. Public-Private Partnerships are typically supported by three complementary agreements. The prime contract documents the relationship between the program office and the private sector entity. The Partnership Agreement establishes the overarching organizational interactions, assumptions and processes the stakeholders agree to follow during the partnership. The Implementation Agreement describes the specific workloads with the details of performance execution by the partners, along with agreed upon workload forecast and metrics. The PSM is responsible for developing and managing the public-private partnership and harmonizing the three agreements to ensure an effective and affordable product support strategy.

7.15.2. The PSM identifies potential public-private partnerships supporting the product support strategy early in the life cycle, and continuously evaluates potential partnering opportunities for the duration of the life cycle.

7.15.2.1. The PSM considers public-private partnerships in the RFP for the Engineering and Manufacturing Development phase and documents the considerations in the LCSP.

7.15.2.2. For fielded systems, the PSM considers the use of public-private partnerships to improve sustainment outcomes and documents the considerations in the LCSP.

7.15.2.3. The PSM provides copies of all partnership and implementation agreements supporting the product support strategy in an annex to the LCSP.

7.15.2.4. The PSM, in collaboration with impacted Air Logistics Complex (ALC) or responsible Government partner, periodically reviews each public-private partnership to ensure it is effective, efficient, and meeting program targets.

7.15.3. The PSM, in collaboration with impacted Air Logistics Complex (ALC) or responsible Government partner, conducts an analysis to ensure the decision to enter into an Implementation Agreement is supported by an analysis specific to the particular workload being considered for the partnership. **Note**: This analysis is tailored to the particular Implementation Agreement and is different than the PS-BCA.

7.15.3.1. The analysis considers costs, benefits, opportunities, risks, investments, resource needs, constraints, organic impacts, Core workload requirements, and the best use of public sector capabilities. The analysis should assess potential partnership structures and management controls to ensure best value of the Public-Private Partnership to the U.S. Government.

7.15.3.2. The PSM may leverage analysis developed in support of the DSOR decision to meet the requirement.

7.15.4. The PSM, in collaboration with impacted Air Logistics Complex (ALC) or responsible Government partner, ensures cost data for all factors of production (e.g., direct labor, overhead, materiel, as well as general and administrative expense) are captured, tracked, and monitored for each Implementation Agreement supporting a public-private partnership. The cost data must be quantifiable and measurable utilizing generally accepted accounting practices.

7.15.5. There are three basic types of public-private partnership arrangements: Direct Sales Agreements, Workshares, and Leases. The PSM collaborates with the contracting officer to ensure unique public-private partnership requirements are included in the applicable contract. Such requirements might include workload requirements, remedies, or equitable adjustments. **Note**: The PSM may request the Contracting Officer consider prime contract provisions for equitable adjustments or excusable delays (relieving the contractor of responsibility for Air Logistics Complex non-performance or non-compliance) when determining appropriate profit and fee based on reduced contractor risk in accordance with DFARS 215.404-71.

7.15.5.1. In a Direct Sales Agreement, dollars flow from the government buying activity directly to the contractor. The contractor, in turn, funds the depot by funds transfer to the Department of Treasury for the goods/services supplied by the depot. The funds received for work performed in support of a Direct Sales Agreement are credited to the depot's Working Capital Fund rather than getting deposited into a general U.S. fund account. The contractor may also supply materiel to the depots in support of this type of arrangement.

7.15.5.2. A Direct Sales Agreement is the most appropriate type of public-private partnership when the supported product is immature or unstable. A direct sales public-private partnership is most appropriate when the supported product or process is immature or unstable, and when the buying activity intends to transfer risks related to product or process immaturity, or instability to the private partner.

7.15.5.3. Direct Sales Agreements must be scrutinized, and the pass-through costs associated with this type of arrangement must be specifically addressed in the supporting analysis.

7.15.5.4. The PSM includes the basis for selecting a Direct Sales Agreement in the LCSP.

7.15.5.5. A Workshare is an arrangement where the buying activity determines the best mix of work leveraging and capitalizing on each partner's capabilities. The workload is then shared between the contractor and the organic repair entity. The contractor is funded through a contract, and the organic depot is funded through a project order.

7.15.5.5.1. The partnering arrangement between the organic repair entity and contractor focuses on the roles and responsibilities of each partner, and both jointly work to accomplish the overall requirement.

7.15.5.5.2. A workshare PPP is most appropriate when the supported product is relatively stable and mature, and when the buying activity does not intend to transfer risk to the private partner.

7.15.5.6. Leases allow private industry access to facilities/equipment located at a Center of Industrial and Technical Excellence. Facilities or equipment located at a Center of Industrial and Technical Excellence may be made available to private industry to perform maintenance or produce goods, if it does not preclude the Center of Industrial and Technical Excellence from performing its mission. The goal is to make those government owned facilities more efficient and ensure that a workforce with the necessary manufacturing and maintenance skills are available to meet the needs of the armed forces.

**7.16. Technical Orders.** TOs provide clear and concise instructions for safe and reliable operation, inspection and maintenance of centrally acquired and managed DAF systems and commodities. The terms "Technical Manual," "Interactive Electronic Technical Manual," and "manual" are used interchangeably with the term "TO." The TO System consists of the methods, procedures and the standard TO management system used to author, publish, manage, distribute and use TOs.

7.16.1. Military and government civilian personnel operating or maintaining fielded systems, subsystems, or end items (hardware and software) utilize and comply with applicable government verified TOs. Compliance with TOs is mandatory, except as explained in TO 00-5-1, *AF TO System*.

7.16.2. The PM documents the strategy for developing and verifying TOs in the TO Life Cycle Management Plan and TO Life Cycle Verification Plan. Content requirements for these plans is provided in TO 00-5-3, *AF TO Life Cycle Management*.

7.16.3. The PM is responsible to:

7.16.3.1. Ensure TOs and Preliminary TOs are developed and verified in accordance with DoD 5010.12-M, *Procedures for the Acquisition and Management of Technical Data*, TO 00- 5-1, and TO 00-5-3. TOs for FMS systems are ordered and distributed in accordance with TO 00-5-19, *Security Assistance TO Program*. U.S. Security Assistance Organizations provide assistance to the PM as required.

7.16.3.2. Ensure fielded TOs are technically accurate and up to date.

7.16.3.3. Ensure TCTOs are issued and verified in accordance with TO 00-5-15.

7.16.3.4. Develop TOs in accordance with approved Government Technical Manual Specifications and Standards and ASD-S1000D, *International Specification for Technical Publications Utilizing a Common Source Database*, listed in the Technical Manual Contract Requirements document, TM-86-01 used to document program requirements for DAF Technical Manuals. This includes the development of linear-structured, Electronic Technical Manuals and database- structured, Interactive Electronic Technical Manuals.

7.16.3.5. Provide TO management for the life cycle of assigned system/commodity TOs and ensure fielded TOs are technically accurate and up to date in accordance with the recommended change (RC) procedures and timelines specified in TOs 00-5-1 and 00-5-3 and AFI 11-215, *Flight Manuals Program*.

7.16.3.6. Provides inputs to the Comprehensive TO Plan for assigned system/commodity in accordance with AFMAN 63-143.

7.16.3.7. Maintain currency of TO index, configuration, distribution, and content data, etc., for assigned system/commodity in the Standard TO Management System.

7.16.3.8. Ensure Interactive Electronic Technical Manuals are developed in accordance with ASD-S1000D and current business rules listed in MIL-STD-3048B, *Air Force Business Rules for the Implementation of S1000D*.

7.16.3.9. Acquire existing COTS manuals instead of developing new TOs if there is no degradation of performance. The manuals are assigned TO numbers and managed in the TO system. When acquiring COTS manuals, request unrestricted rights.

7.16.3.10. Acquire and manage flight manuals when required in accordance with AFI 11-215 and TO 00-5-3.

7.16.3.11. Review available manuals from other DoD components to determine adequacy and application to particular programs. Joint-use technical manuals are integrated into the TO system, assigned TO numbers, indexed, distributed, stored, reprinted, and rescinded in the same manner as any other TO (AFI 20-118, *Instructions for the Interservicing of Technical Manuals and Related Technology Program*).

7.16.4. The PM provides verified TOs for fielded DAF systems (hardware or software) that are operated and maintained by military or government civilian personnel unless exceptions are listed in TO 00-5-1 or waived by the PEO after consultation with the using command commander.

7.16.5. In the absence of verified TOs for fielded DAF systems that are operated and maintained by military or government civilian personnel, the PM can authorize the use of Original Equipment Manufacturer repair manuals until developed TOs are available and verified.

7.16.6. The PM ensures TO procedures to be used with nuclear weapons are nuclear safety certified in accordance with DAFI 91-101 and AFI 63-125.

7.16.7. The PM provides TOs or other suitable technical data identifying procedures for system disassembly, demilitarization, and disposal. Where procedures already exist (e.g., 309th Aerospace Maintenance and Regeneration Group workbooks and procedures for existing aircraft), the PM reviews and verify those procedures. Demilitarization and disposal procedures should identify demilitarized-coded parts and Hazardous Material locations, and include special tools and equipment, personnel qualifications, and ESOH requirements.

7.16.8. TOs should address equipment and special tools substitutions and restrictions. Do not make substitutions and restrictions of equipment and tools used with nuclear weapons without the approval of the AFNWC.

7.16.9. TOs may contain classified information only up to and including Secret-Restricted Data. Data is classified in accordance with guidelines found in DoDM5200.01V1_AFMAN16-1404 V1, and respective security classification guides.

7.16.10. Flight manuals are a type of TO and direction for managing and using flight manuals is in AFI 11-215. Do not place unverified flight manual data on an aircraft for operational use. For more information on managing and using flight manuals including requesting deviations or waivers to specific flight manuals, see AFI 11-215.

7.16.11. Unclassified TOs are marked, controlled, and distributed in accordance with DAFI 61-201.

7.16.12. AFMC is designated the executive agent for the TO System. To ensure the integration of the various system activities, AFMC assigns a TO System Director who is responsible to:

7.16.12.1. Represent the DAF for TO technical and management issues with DoD, other Government agencies, industry, and other DAF activities.

7.16.12.2. Develop processes and procedures for implementation, management, and execution of the TO System. This can include chartering a Centralized TO Management Committee for the coordination of TO policy recommendations with the using commands and functional user communities.

7.16.12.3. Develop requirements for the operation, modernization, and maintenance of the Standard TO Management System and for the integration of the system with other DAF management systems.

7.16.13. Existing COTS operating instructions, part breakdown handbooks, and repair manuals should be acquired instead of developing new TOs if no degradation in performance results. Manuals are assigned unique TO numbers and managed within the Standard TO Management System unless covered by the exclusions identified in TO 00-5-1.

7.16.14. The Standard TO Management System provides the capabilities to facilitate acquisition and sustainment requirements. Programs must use the CAFTOP to plan and schedule program requirements, TO Authoring and Publishing for organic sustainment of technical data, Data Services Online for print and distribution, and Enhanced Technical Information System for configuration management, distribute TOs and archive technical data. These information systems are mandatory, unless exempted by TO 00-5-1 or TO 00-5-3.

**7.17. Support Equipment/Automatic Test Systems (SE/ATS).** Application of standardized SE/ATS is preferred to provide efficiency and reduce cost. The PM minimizes the proliferation of system-unique equipment at all levels while ensuring the maintenance and deployment requirements of existing and developing systems are met.

7.17.1. The PM utilizes the AFMC support equipment recommendation document process to acquire SE/ATS. System-unique equipment should be acquired only as a last alternative, after coordination with the SE/ATS Product Group and consideration of SE/ATS already existing in the DAF or DoD inventory.

7.17.2. The PM is responsible to:

7.17.2.1. Select SE/ATS based on cost benefit analysis over the system life cycle, reliability, CBM+ compliance, standardization, and field hardness, size, mobility, ESOH considerations and operational environmental needs.

7.17.2.2. Coordinate SE/ATS development, procurement, and modification requirements with the SE/ATS Product Groups, who ensure DoD processes for Support Equipment and Automatic Test System selection are followed. The SE/ATS Product Groups provide any applicable SE/ATS-specific contract data requirements for incorporation when the PM is authorized to procure unique/peculiar SE/ATS.

7.17.2.3. Submit waivers to the SE/ATS Product Group and obtains approval prior to acquiring non-standard SE/ATS DoD solutions. The PEO responsible for the program resolves any waiver disputes prior to procurement.

7.17.2.4. Endeavor to design systems, subsystems, and end-items to minimize new SE/ATS development while still optimizing the life cycle users' operational capabilities and product support requirements.

7.17.2.5. Contract for and coordinates support equipment recommendation data with the SE/ATS and AF Metrology and Calibration Product Groups. Coordinate with the AF Metrology and Calibration on all calibration requirements, including those involving Public-Private Partnerships.

7.17.2.6. Obtain SE/ATS Product Group Support Equipment Recommendation Data approval prior to procurement of system unique SE/ATS. The PEO resolves any Support Equipment Recommendation Data disputes prior to procurement.

7.17.2.7. Document requirements for new or replacement SE/ATS, or modifications of existing SE/ATS.

**7.18. Provisioning.** The PM of new systems, subsystems, modifications to existing systems, or sustainment activities for existing weapons systems determines and acquires as applicable the range and quantity of support items, including initial spares, necessary to operate and maintain an end-item of materiel for an initial period of service in time to meet the operational need date. Initial spare parts include peculiar and common repairable and consumable components, assemblies, and subassemblies must be available for issue at all levels of supply in time to support newly fielded end items during their entire production run and initial retail fielding efforts. The PM ensures that the logistics business processes implemented within their applicable programs are aligned with provisioning guidance, to include obtaining planning factors, engineering data for provisioning, repair level analysis, and logistics support analysis. Readiness-Based Sparing techniques will be used in performance-based weapons system product support arrangements. Headquarters AFMC, Logistics, Civil Engineering, Force Protection and Nuclear Integration Directorate (HQ AFMC/A4/10), have been given delegated responsibility for provisioning procedural guidance in accordance with AFI 23-101. Reference DoDM 4140.01, Vol. 2; AFPD 23-1, *Materiel Management*; AFI 23-101; SAE-GEIA-STD-0007, *Logistics Product Data*; SAE TA-STD-0017, *Product Support Analysis*, and other applicable DAF Provisioning guidance.

**7.19. Divestiture Planning.** Program divestiture planning is the process used to layout the rate at which the system is drawn down; document decisions on whether to store them for future spares requirements, send to Defense Logistics Agency Disposition Services, or to demilitarize. The planned divestiture is shared with the PSM, Environmental Resources Manager, and Supply Chain Manager. The Supply Chain Manager will ensure this information is put into the DAF computation system to ensure accurate repair and buy forecasts. **(T-2) Divestiture** planning begins when the lead command identifies diminished mission requirements for a system due to retirement, lower mission requirements, or mission changes to a particular platform. The PM/PSM ensures appropriate funding to execute drawdown plan is in place, update program documentation to include TOs and Programmed Depot Maintenance (PDM), and ensures requirements are updated.

**7.20. Demilitarization, Removal from Service, Disposal, Reclamation, and Migration.** Migration planning is an integral part of system life cycle planning as an element in the inventory management of DAF assets. Demilitarization, reclamation, and disposal guidance is contained in DoDM 4160.28, Vol 1, *Defense Demilitarization: Program administration*; and AFI 23-101. For air and space programs also refer to AFPD 16-4, *Accounting for Aerospace Vehicles at Units and Installations* and AFI 16-402, *Aerospace Vehicle Programming, Assignment, Distribution, Accounting, and Termination*. For Nuclear Weapon Related Materiel refer to AFI 20-110. When the requiring activity determines equipment is obsolete or excess, the PM documents equipment by part number/tool control number, states the asset is obsolete/excess, and is being permanently removed from service with a copy of that document sent to the storage facility manager. **Note**: Refer to AFI 23-101 for additional guidance.

7.20.1. Demilitarization Plans. Demilitarization planning early in the development of a system is important to reduce the risks of inadvertent release of military property. Document Demilitarization requirements for items such as prototypes and tooling, end items, and each National Stock Number, as well as procedures for demilitarizing the items. DoDM 4160.28, Vol 1 provides guidance for programmatic and procedural plans. Demilitarization plans are documented when prototypes are delivered. The PM ensures demilitarization and disposal of end items are addressed in the program budget.

7.20.1.1. Demilitarization Code Determination/Procedures and Execution of Demilitarization Plans. Demilitarization code determination is performed as soon as material designs are documented.

7.20.1.2. Programmatic Plans include the process (e.g., TOs, Configuration Control Board, etc.) to ensure program changes such as technology insertion, block upgrades, and approved engineering changes are documented in the procedural plan.

7.20.1.3. For aircraft programs, the PM develops a transition plan addressing reclamation and disposal for each mission design series, to include peculiar end items associated with the system. For systems not designated as mission design series, ensure the plan includes mitigation to the system or end item level.

7.20.1.4. The PM documents an assessment of when the initial migration plan is due per AFI 16-402. The migration plan is documented and periodically reviewed. Generally, this would be when retirements of the system are scheduled in the Future Years Defense Program (FYDP).

7.20.2. The PM is responsible to ensure demilitarization, disposal and reclamation support requirements are identified and documented in the LCSP no later than milestone C. Forecast funding well enough in advance to support execution of these activities throughout each weapon system's life cycle. Requirements should include recycling and disposal of hazardous material, and analysis of the system if locations and quantities of hazardous materials are not known. The PM periodically reviews and updates the forecasted funding and cost estimates for military equipment and weapon system programs.

7.20.3. The PM disposes of IT hardware and software assets in accordance with AFMAN 17-1203.

7.20.4. The PM determines if property is obsolete or excess to requirements prior to sending property (to include Special Test/Special Tooling Equipment) to long-term storage.

7.20.5. When the owning activity determines equipment is obsolete or excess, the PM identifies the equipment by part number/tool control number and provides documentation to the storage facility manager that the equipment is being permanently removed from service. Refer to AFI 23-101 for additional guidance.

**7.21. Propulsion Management.** Propulsion management refers to the management of assets that are air breathing primary propulsion systems for manned and unmanned aerial vehicles.

7.21.1. AFMC has designated AFLCMC/LP as the Director of Propulsion. The Director of Propulsion is the single focal point for propulsion life cycle management processes and procedures and the AFMC point of entry for support to the PMs and MAJCOM/FLDCOMs. The Director of Propulsion ensures standardized processes and the inclusion of requirements for all acquisition and sustainment planning phases for the life cycle management of propulsion assets as detailed in AFMAN 20-116, *Propulsion Life Cycle Management for Aerial Vehicles*.

7.21.2. Engines managed as essential items to weapon system performance are:

7.21.2.1. Purchased under the "Life-of-Type Buy" concept, which for a new program is the initial acquisition of engines for the anticipated life cycle requirement of the program.

7.21.2.2. Subject to special centralized management, including inventory control, computation of requirements, distribution, information systems, and be serially managed and controlled throughout their life cycle in accordance with TO 00-25-254-1, *Comprehensive Engine Management System (CEMS) Engine Status, Configuration and TCTO Reporting Procedures*.

7.21.2.3. Assigned performance goals supporting the readiness goal of the weapon system throughout its life cycle.

7.21.3. PMs managing programs with propulsion system requirements must satisfy all execution and reporting requirements as specified in AFMAN 20-116.

# Chapter 8

## GUIDANCE APPLICABLE TO PROGRAMS CONTAINING INFORMATION TECHNOLOGY

**8.1. Networks and Information Integration Requirements Overview.** The PM is responsible for ensuring application of the RMF for all DoD systems, including during requirements development, procurement, DT&E, OT&E, and sustainment consistent with AFI 17-101.

**8.2. Planning Requirements.** The PM is responsible for reviewing and implementing the requirements related to security, interoperability, supportability, sustainability, and usability in **Table 8.1**. These planning requirements do not apply to all programs except when required by applicable law and regulation.

**Table 8.1. Programs Containing Information Technology Requirements.**

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|---|---|
| **(A) Title:** Clinger-Cohen Act Compliance | **DAF Source Publication(s):** AFMAN 17-1402, *Clinger-Cohen Act (CCA) Compliance* |
| **Applicability:** All AF programs containing IT regardless of pathway or categorization. | **When Required:** Prior to all milestones and contract awards in accordance with AAFDID at the Defense Acquisition University portal at https://www.dau.edu/aafdid/Pages/About.aspx. |
| **Information:** Clinger-Cohen Act compliance and reporting applies to the acquisition, management, operation, and closure of all AF IT investments, as well as to all programs that acquire IT. This includes NSS, space and non-space systems, IT systems acquisition programs, DBSs, infrastructure, and intelligence systems. | |
| **(B) Title:** IT Portfolio Management and System Registration | **DAF Source Publication(s):** AFI 17-110, *Information Technology Portfolio Management and Capital Planning and Investment Control* |
| **Applicability:** All IT and NSS | **When Required**: As early as possible but no later than Milestone A or equivalent. |
| **Information:** The Information Technology Investment Portfolio Suite (ITIPS), or the authoritative system designated in AFI 17-110, is an AF IT data repository used to collect system information at the AF level for both internal compliance and reporting to DoD and OSD. **Note**: SAPs and Sensitive Compartmented Information (SCI) programs are not authorized in Enterprise Information Technology Data Repository or ITIPS; SAP programs contact SAF/CN and SCI and ISR programs contact A2/6OI for registration. | |

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| **(C) Title:** Interoperability Certification for IT and NSS | **DAF Source Publication(s):** AFI 17-140 |
| **Applicability:** Applicable to all IT, including NSS. | **When Required:** Testing completed before or during OT&E. |
| **Information:** Interoperability considerations are documented in the Information Support Plan (ISP), and test requirements are coordinated with the appropriate agency (CIO for AF, Joint Interoperability Test Command for Joint requirements). Refer to DoDI 8330.01, *Interoperability of Information Technology (IT), Including National Security Systems* for detailed guidance. | |
| **(D) Title:** AF IT Standards | **DAF Source Publication(s):** AFI 17-140 |
| **Applicability:** All IT | **When Required:** System Design |
| **Information:** The PM ensures system development adheres to mandated IT standards outlined in the Global Information Grid Technical Guidance Federation (https://gtg.csd.disa.mil/disr/dashboard.html). The PM also ensures technical and security compliance with all relevant Defense Information System Agency (DISA) Security Technical Implementation Guides. | |
| **(E) Title:** Privacy | **DAF Source Publication(s):** AFI 33-332, *Air Force Privacy and Civil Liberties Program* |
| **Applicability:** Systems that maintain, use, store, or disseminate personally identifiable information (PII) | **When Required:** Must be compliant prior to deployment of the system and during cybersecurity validation and budget recertification |
| **Information:** Ensure privacy controls are implemented to protect PII and other privacy related information | |
| **(F) Title:** Records Management | **DAF Source Publication(s):** AFI 33-322, *Records Management and Information Governance Program* |
| **Applicability:** All programs creating and receiving records | **When Required:** Must be compliant prior to deployment of the system |
| **Information:** Electronic records (e-records) or record data have a National Archives and Records Administration approved schedule that provides for the disposition of the e-records when agency business need for the records ceases, i.e., destruction of temporary records and transfer to the National Archives of the United States for permanent records. | |

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| **(G) Title:** IT Budget Reporting | **DAF Source Publication(s):** AFI 17-110 |
| **Applicability:** All IT Investments | **When Required:** Continuous |
| **Information:** The PM supports the input of the DAF IT Budget Reporting requirements by reporting in the designated DAF IT data repository: Information Technology Investment Portfolio Suite and Select & Native Programming Data Input System for Information Technology for Capital Investment Reports, also referred to as Exhibit 300s or Major IT Investment. The PM ensures the dollar amounts entered are approved budget positions, as reflected in the designated DAF budget repository, not funding requirements. **Note**: Refer to 40 USC Section 11319, *Resources, Planning, and Portfolio Management*, OMB Circular A-11, Sec 55 – Information Technology Investments; and the *DoD Financial Management Regulation* 7000.14-R, Vol. 2B, *Budget Formulation and Presentation*, Chapter 18, *Information Technology*. SAF/CN provides specific AF guidance with its budget estimate submission and President's Budget Submission Guidance. | |
| **(H) Title:** Enterprise Hardware and Enterprise Software Contract Use | **DAF Source Publication(s):** AFMAN 17-1203 |
| **Applicability:** All AF units purchasing IT products and solutions | **When Required:** Contract Awards |
| **Information:** The PM, in coordination with the PCO, reviews enterprise hardware and software contracts for applicability to determine if a requirement for a proposed IT acquisition is within the scope of those contracts. If the applicability is unclear, the PM, in coordination with the PCO, works with the program office managing the enterprise solution to determine the applicability. For all acquisitions, the PM documents whether or not the program is using the contract vehicles identified in AFMAN 17-1203 or available through the Office of the Chief Software Officer (https://software.af.mil/) are in the strategy prior to any contractual action. If the program is not using enterprise contracts, the PM documents the justification and rationale in the MDA approved Acquisition Strategy. | |
| **(I) Title:** Risk Management Framework | **DAF Source Publication(s):** AFI 17-101 |
| **Applicability:** All IT Investments | **When Required:** Throughout life cycle; to support certification prior to test or operation |
| **Information:** The PM registers in the appropriate Enterprise Mission Assurance Support Service (eMASS) and provides required cybersecurity documentation. | |
| **(J) Title:** Cloud Computing | **DAF Source Publication(s):** AFI 17-101 |

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| **Applicability:** All new and modernizing (changing configuration baseline) IT investments | **When Required:** System Design |
| **Information:** PMs will ensure that cloud computing technical requirements for acquisition programs are in compliance with utilization of DoD Enterprise Cloud Environments, or other approved cloud environments. **Note**: PEO C3I&N acts as both a Managed Services Office, under the name Cloud One. Cloud One has established a set of baseline-driven platform and infrastructure services in both physical and virtual hosting environments and ensure that an application meets the technical requirements to move to a cloud. PEO C3I&N assists DAF acquisition programs to define requirements and capabilities that can be leverage enterprise services and existing cloud environments in order meet DoD Cloud Strategy and guidance. | |
| **(K) Title:** Common Computing Environments | **DAF Source Publication(s):** AFI 17-110 |
| **Applicability:** All new and modernizing (changing configuration baseline) IT investments | **When Required:** System Design |
| **Information:** Leverage enterprise services and existing infrastructures in order to identify technical requirements for the materiel solution. **Note**: The PEO C3I&N Managed Services Office (MSO) provisions Common Computing Environments. The MSO has established a set of baseline-driven platform and infrastructure services in both physical and virtual hosting environments. | |
| **(L) Title:** Architecture | **DAF Source Publication(s):** AFI 17-140 |
| **Applicability:** All processes, services, systems, and procedures in support of decision making, transformation, and governance | **When Required:** Program Offices must update their solution architecture whenever there are updates to the program. The architecture is required for CCA review and submitted when an ISP is reviewed in GTG-F. |
| **Information:** Program architectures are those architectures which reflect the programs, systems and or services which provide IT support to the Domains and Service Core Functions. These architectures are developed and managed by various AF organizations. | |
| **(M) Title:** Information Support Plan | **DAF Source Publication(s):** AFI 17-140 |

<table>
<tr><td><b>Applicability:</b> IT and NSS programs, regardless of ACAT, and systems in sustainment that exchange information of any type to other systems (e.g., not a stand-alone system or application)</td><td><b>When Required:</b> In accordance with the schedule depicted in the AAFDID or pathway publication for the pathway (MCA, MTA, Software, and Defense Business System).</td></tr>
<tr><td colspan="2"><b>Information:</b> The Information Support Plan is a technical document required by DoDI 5000.85 and DoDI 8330.01 that provides a means to identify and resolve potential information support implementation issues and risks that, if not properly managed, will limit or restrict the ability of a program to be operationally employed to support existing and future mission requirements. It is an authoritative document that directly informs the program's test plan. Plan names may vary when documentation is tailored and the Acquisition Adoptive Framework being used, for example, major capability programs will have a TEMP with threshold and objective operations parameters, and it is a key vehicle that supports validation of a program's eligibility for interoperability certification.</td></tr>
<tr><td><b>(N) Title:</b> Air Force Cyber Intrusion Damage Assessment</td><td><b>DAF Source Publication(s):</b> AFI 17-130</td></tr>
<tr><td><b>Applicability:</b> All DAF functional authorities and MAJCOM/FLDCOM s</td><td><b>When Required:</b> At the request of the DAF Chief Information Security Officer</td></tr>
<tr><td colspan="2"><b>Information:</b> Provide appropriate programmatic and technical subject matter experts, to work with intelligence analysts, operations subject matter experts and cyber forces, as part of Integrated Product Teams to assess compromised DoD information resulting from cyber intrusions to defense contractor networks. DAF Damage Assessment Management Office personnel assist the Integrated Product Teams in the damage assessment process. Damage assessment reports are drafted for each case and disseminated to the appropriate DAF program offices, agencies, and stakeholders for review and possible mitigation actions. Within 30 days of the damage assessment report, the PM should provide the PEO a written response to the damage findings along with proposed countermeasures and revised mitigation strategies that nullify the advantages gained by an adversary from the documented information or propose acceptance of the threat risk and rationale.</td></tr>
<tr><td><b>(O) Title:</b> National Security Systems. NSS determination.</td><td><b>DAF Source Publication(s):</b> AFPD 17-1 and DAFI 63-101/20-101</td></tr>
<tr><td><b>Applicability:</b> All IT systems and programs.</td><td><b>When Required:</b> At initial system and program planning and accomplished again throughout the life cycle when system changes are made. The program determination should be reviewed at least annually and resubmitted when the status changes.</td></tr>
</table>

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|---|---|
| **Information:** Emphasis on program protection of national security systems continues to be a topic highlighted by recent EO 14028 and National Security Memorandum 8, determination of a system or program as a NSS should be an on-going process based on initial program or system planning or changes to the program or system. A determination checklist of a program national security assessment will be submitted by the program manager for review and approval and validated and tracked by SAF/CNZ in ITIPS and SAF/AQX (or SAF/SQX for space systems) in PMRT. | |
| **(P) Title:** Cybersecurity**.** | **DAF Source Publication(s):** DoDI 5000.90 and DoDI 5000.83_DAFI 63-113 |
| **Applicability:** All IT systems and programs. | **When Required:** Throughout the life cycle. |
| **Information:** Leaders and experts must address how cybersecurity will evolve as technology and threats advance for a program’s life cycle. | |

## Chapter 9

## MODIFICATION MANAGEMENT

**9.1. Modification Management Overview.** Modifications are changes to hardware or software to satisfy an operational mission requirement by removing or adding a capability or function, enhancing technical performance or suitability, or changing the form, fit, function, and interface of an in-service, configuration-managed DAF asset. Modifications can retain existing capability, extend service life, correct product quality deficiencies, or retain/restore the functional baseline or performance specification. Modifications may improve the operational availability of the item, transform or modernize DBSs, or reduce ownership costs. This chapter applies to weapon systems or other designated systems, subsystems, and items requiring additional configuration control.

9.1.1. All modification activities in continued materiel support of a weapon system are assigned to a PM or designated individual with the responsibility for, and authority to accomplish modification program objectives for the development, production, and sustainment of materiel modifications satisfying user operational needs **(waiver authority is the PEO)**. The PM has overall management authority and accountability to accomplish the development, T&E, production, and sustainment objectives for a given modification activity and coordinate planning, programming, budgeting, and execution of the modification.

9.1.2. The PM removes temporary modifications from the host system or component at the end of the modification period specified unless converted into a permanent modification. **(T-1)**

9.1.3. Modification requirements are documented, reviewed, and approved using an AF Form 1067 or appropriate JCIDS documentation as described in applicable 10-series AFIs. **(T-1)** The AF Form 1067 (also referred to as the modification proposal) is validated by the lead/using command(s) and approved by the assigned PM. It is the source for the technical requirements baseline. For modifications involving an engineering change proposal, use the technical description of the engineering change(s) for developing the technical requirements baseline.

9.1.4. The PM ensures data required for temporary modifications is developed and acquired commensurate with the modification scope, duration, and employment (waiver authority is the PEO). The PM documents data requirements for temporary modifications in the modification proposal. For more information, refer to MIL-HDBK-61B.

9.1.5. The PM ensures proper financial accounting and document retention for permanent modifications meeting the capitalization threshold. **(T-0)** Permanent modifications that result in a signification improvement in capability or useful life extension may be considered a capitalized improvement and associated costs would need to be added to the value of the underlying asset. (See **paragraph 4.9.5** for additional information).

**9.2. AF Form 1067 Applicability.** The AF Form 1067 provides a means to track modification proposals through the approval/funding process, and to initiate actions to maintain configuration control of items affected by the modification, even though the capability is described in a previously approved capability requirements document. The form provides a means for the system or commodity manager with configuration control over the affected asset(s) to document the technical parameters associated with the modification, such as systems engineering requirements and recommendations, impacts to logistics support elements associated with the asset(s), and the type and amount of funding necessary to accomplish the modification.

9.2.1. The AF Form 1067 normally used to initiate temporary modifications and permanent sustainment modifications for fielded systems and equipment.

9.2.1.1. An AF Form 1067 can also be used to initiate and document the submission, review, and approval of requirements for permanent capability modifications estimated to cost no more than ten percent of the ACAT II minimum threshold dollar value (as defined in DoDI 5000.85). Consult AFI 10-601 and the AF/A5/7 *Capability Development Guidebook*s Vol 2A-H for detailed information on the DAF requirements generation, capability requirements document preparation, and approval processes.

9.2.1.2. The requesting organization will complete capability requirements document consistent with the planned pathway to establish the user's requirement(s) for permanent modifications upon determination at any point of the AF Form 1067 review/certification process that the requirement exceeds thresholds defined in applicable 10-series AFIs. **(T-1)**

9.2.1.3. An existing approved capability requirements document or AF Form 1067 capability document for a temporary modification can be used as justification to transition to a permanent modification. However, for long-term sustainment planning, a new AF Form 1067 for the permanent modification must be approved.

9.2.2. UCA modifications processing is described in DoDI 5000.81_DAFI 63-147 and applicable DAF 10-series publications.

9.2.2.1. A streamlined AF Form 1067 is generated and processed to summarize the modification requirement, to document the technical parameters necessary to satisfy the urgent need, and to initiate the modification management processes.

9.2.2.2. Other modification proposal documents, such as airworthiness directives produced by the FAA and Service Bulletins developed by defense industry manufacturers, may fulfill modification proposal documentation requirements, and be attached to the AF Form 1067 for recording required reviews and approvals.

9.2.3. Lead, using, and implementing commands may develop standard processes for subordinate units to develop, submit and validate AF Form 1067 information meeting the intent of this instruction. For example, attaching a SEEK EAGLE Request, can fulfill or supplement sections of the AF Form 1067.

### 9.3. Modification Types.

9.3.1. There are two primary types of modifications, temporary and permanent. Refer to the AF/A5/7 *Capability Development Guidebooks, Vol 2A-H.* and **Attachment 2**, *Modification Proposal Process*, in this instruction for guidance on the use of AF Form 1067, and for assistance defining, validating, and approving modification requirements.

9.3.2. Temporary Modifications. Temporary modifications change the configuration of an item to enable short-term operational mission accomplishment, or to conduct T&E of new and modified equipment. Temporary modification proposals are validated, reviewed, approved as described in the *AF/A5/7 Capability Development Guidebooks, Vol 2A-H* and this instruction. Refer to DAFMAN 65-605, Vol. 1 for DAF policy on funding. There are two kinds of temporary modifications: Temporary Type 1 (Type-1 or T-1) and Temporary Type 2 (Type-2 or T-2).

9.3.2.1. Temporary modifications are managed using temporary modification baselines and additional supporting documentation attached to the modification proposal for review, approval, and potential future transition to a permanent modification.

9.3.2.2. Type-1 temporary modifications change the configuration of an item in order to satisfy short-term operational mission requirements by adding, modifying, or removing hardware or software components or capabilities in a manner providing an immediate operational benefit. Type-1 modifications typically involve the use of existing off-the-shelf or non-developmental items, including stock-listed equipment and materiel. The Type-1 modification proposal specifies the number of units to be modified, duration of installed Type-1 modification, and plans for removing the modification converting it to a permanent modification.

9.3.2.2.1. Type-1 modifications cannot be used to circumvent the requirements associated with permanent modifications, as prescribed in this instruction, or the lack of appropriate modification funding. **(T-1)**

9.3.2.2.2. Type-1 modifications are normally accomplished and supported locally by a MAJCOM/FLDCOM or base-level operational unit. If support includes partial or full depot support, the lead/using command is responsible for funding the depot requirements.

9.3.2.2.3. The PM is responsible to ensure all Type-1 modifications do not compromise system capability and performance. This includes the PM conducting test, in conjunction with the appropriate lead command test organization, to ensure previously approved operational safety, suitability, and effectiveness of a Type-1 modified asset is not compromised.

9.3.2.2.4. Type-1 modification proposals are approved by the PM, lead command certification/approval authority, or AF/A5R as specified in the *AF/A5/7 Capability Development Guidebooks, Vol 2A-H*. Requests must include clear and compelling evidence showing why the temporary modification is needed to support mission requirements. The request should be coordinated through the lead command (as identified by DAFPD 10-9), to the PM within AFMC, USSF, or AF/A5R as applicable. T-1 modifications to AFRC or ANG systems, or if the system uses National Guard and Reserve Equipment Account funding, will be coordinated through AFRC or ANG, and using command before PM approval. **(T-2)** Type-1 modifications with duration of greater than one year must be supported by clear and compelling justification/rationale to exceed one year. **Note**: All T-1 AF Forms 1067s submitted under the five-asset/one-year rule of the July 2001 version of AFI 63-1101(superseded) can no longer apply for waivers and need to submit a new modification proposal (AF Form 1067).

9.3.2.2.5. Type-1 modifications are not authorized permanent logistics support such as peculiar support equipment and sustaining engineering support. **(T-2)** However, minimum essential logistics support, including verified technical data or ICS, essential for the temporary operation and sustainment of the modification in its designated mission environment are provided, consistent with weapon system support concepts and product support strategies. The lead command determines these minimum essential logistics support requirements in coordination with the PM.

9.3.2.2.6. Type-1 modifications may be used to satisfy UCA programs in the Year of Execution.

9.3.2.2.7. All Type-1 modifications are removed from the host system or component at the end of the modification period specified on the approved AF Form 1067. **(T-1)**

9.3.2.2.8. If a new AF Form 1067 or other equivalent requirements documentation is approved to replace the Type-1 with a permanent modification in lieu of removal, use acquisition policy, procedures, processes, and funding guidance described in this instruction for converting to a permanent modification. The lead command will provide the PM with the new approved AF Form 1067 to use in updating the LCSP to ensure permanent life cycle management issues such as supportability are addressed.

9.3.2.2.9. Organizations requesting to extend the installation of a Type-1 modification beyond the currently approved quantity or time-period are required to prepare and submit a new modification proposal.

9.3.2.2.10. Type-1 modifications are removed prior to host weapon system/component input for PDM unless otherwise coordinated between the lead command/using organization and the depot maintenance activity. In the rare situation where a Type-1 modification is not removed prior to PDM, the lead command/using organization coordinate with the performing depot maintenance organization to ensure the Type-1 modification does not interfere with scheduled maintenance activities and that maintenance activities do not alter the installed Type-1 modification.

9.3.2.2.11. Type-1 modification includes the inherent authority to install developmental components of the modification, conduct testing for the purposes of engineering investigations, and evaluate the modification to ensure the configuration satisfies the Type-1 requirement and preserves the technical baseline.

9.3.2.2.12. Type-1 modified assets must be capable of being returned to their original or currently approved permanent configuration within a time-period specified by the lead command (typically 48 hours) and documented in AF Form 1067. **(T-2)**

9.3.2.2.13. Type-1 modification proposals describe any demilitarization and disposition of components when removed.

9.3.2.3. Type-2 Temporary Modifications. Type-2 modifications are used to evaluate, demonstrate, or exercise the technical performance, effectiveness, and the suitability of developmental or test materiel (hardware, firmware, and software) capabilities. Type-2 modifications are also used to install and operate T&E-specific support equipment, instrumentation and data recording equipment, telemetry systems, etc., on T&E assets. Type-2 modifications may be used in support of all forms of T&E activity, including DT&E, OT&E, and lead/using command-conducted force development evaluation activities. An AF Form 1067 is required for Type-2 modifications. Type-2 modifications to AFRC or ANG systems, or if the system uses National Guard and Reserve Equipment Account funding, will be coordinated through AFRC or ANG, and using command before PM approval. **(T-2)** If applicable, document how aircraft airworthiness assessment and release are addressed for the Type-2 modification. Information on testing and evaluating systems are found in DoDI 5000.89_DAFI 99-103.

9.3.2.3.1. The PM, the lead command, and designated test agencies collaboratively determine the number of assets requiring Type-2 modification based on the scope, complexity, and length of T&E activities. They collaboratively determine the organizational roles, responsibilities, and procedures for the configuration management, installation, operation, sustainment, and funding requirements for each Type-2 modification.

9.3.2.3.2. The PM, lead command, and test organization may create a single Type-2 modification proposal covering a specified period of time or series of integrated test activities for the purpose of conducting incremental hardware and software T&E, or to identify a range of test support equipment that may be installed in support of T&E activities. In this case, the Type-2 modification proposal enables the PM, lead command, and test organization to install and remove developmental or test materiel (hardware, firmware, and software), or specific pieces of test support equipment on designated test assets without the need for repeated configuration management reviews and approvals. It also allows for testing of current aircraft stores used in a new configuration or on different platforms. In all these cases, the PM, lead command, and test agency should collaborate to maintain accurate and up- to-date configuration control of affected test assets, and to coordinate specific materiel installation requirements and activities.

9.3.2.3.3. T&E organizations and lead commands assist the PM to ensure safety and performance of Type-2 modified assets, and to ensure Type-2 modified assets are provided sufficient sustainment support as needed to complete directed T&E activities.

9.3.2.3.4. Type-2 modifications are maintained on the test asset(s) for as long as necessary to complete T&E activities specified in approved test plans. The asset is then removed and returned to its original or current approved permanent configuration. Instrumentation data collection and other support equipment used for both current and future test data collection requirements are not normally removed after each test. Such Type-2 modifications are removed when no longer required. The Type-2 modification approval authority authorizes retention or removal of instrumentation data collection and other support equipment on test assets during Type-2 modification proposal review, validation, and approval processes.

9.3.2.3.5. Type-2 modifications are normally removed prior to host weapon system/component input for PDM unless otherwise coordinated between the lead command/using organization and the depot maintenance activity. In the rare situation where a Type-2 modifications are not removed prior to PDM, the lead command/using organization coordinate with the PDM activity in updating the work package to describe the Type-2 modification and ensure it does not interfere with the programmed maintenance actions and that maintenance actions do not alter the installed Type-2 modification.

9.3.2.3.6. A Type-2 modification may be used to support T&E of proposed permanent configuration changes. Upon the conclusion of T&E activity, the lead command, in coordination with the PM, determines if the modification will be fielded. If fielded, the Type-2 modification may remain in place upon completion of T&E activity while a permanent modification proposal is processed and implemented in accordance with the provisions of this instruction. The Type-2 modification will be upgraded to the approved permanent configuration as part of the permanent modification program.

9.3.3. Permanent Modifications. Permanent modifications change the configuration of an asset/software for effectiveness, suitability, survivability, service life extension, and reduce ownership costs of a fielded weapon system, subsystem, or item. Some permanent modifications are further designated as safety modifications.

9.3.3.1. Permanent modification efforts are required to comply with all program requirements commensurate with the respective program's ACAT or other categorization level. The permanent modification baseline and additional documentation is attached to the modification proposal for review and approval; then attached or included with the appropriate existing acquisition program documentation.

9.3.3.2. Permanent modifications are used to satisfy requirements approved in accordance with this instruction. An approved permanent modification includes the inherent authority to install developmental components of the modification on test assets for the purposes of conducting engineering investigations, developmental testing, and other evaluation of the modification. An approved permanent modification also includes the inherent authority to perform trial TCTO kit installations and verification activities on test assets to verify the installation procedures and sustainment elements associated with the modification prior to full-rate kit production or fleet- wide installation. A separate Type-2 Modification Proposal is required when trial TCTO kit installs, proofing, and verification activities are performed on operational assets/combat coded aircraft instead of test assets/aircraft.

9.3.3.3. Permanent modifications are only accomplished in response to an approved AF Form 1067 or capability requirements document; reference *AF/A5/7 Capability Development Guidebook, Vol 2A-H* for requirements documentation process information. **(T-0)** The PM may initiate systems engineering tasks and preliminary design activities in anticipation of approved modification documentation. The PM considers the technical complexity and maturity of the stated need, along with programmatic risk, when preparing modification program strategies and plans. In such cases, the PM limits expenditures to the modification financing allowed by DAFMAN 65-605, Vol. 1 while the requirement is undergoing coordination and approval. The modification requirement is fully documented in an approved modification proposal/capability requirements document prior to starting the modification, usually at program initiation for modifications managed as an acquisition category program. Permanent modifications funded with investment dollars are acquisition programs which fall under the acquisition execution chain of authority.

9.3.3.4. Normally, permanent modifications are installed across the entire inventory of the host weapon system or product line. However, when necessary to support operational mission requirements, permanent modifications may be installed on a subset of the host weapon system or product line inventory with the approval of the lead command, applicable PM, and AF/A5/7; reference A5/7 *Capability Development Guidebooks, Vol 1-5* and this instruction.

9.3.3.5. Permanent modifications may be conducted in discrete installation segments (e.g., “Group A” and “Group B” TCTO kit segments) when necessary to support operational mission or deployment requirements or to manage the host weapon system or product line inventory in a cost-effective manner. In this case, the content of each modification segment must be approved by the lead command and the applicable PM. Full funding policy requires all TCTO kit segments be procured with a single year appropriation to field an increment of capability.

9.3.3.6. Permanent modifications are provided full logistics support (e.g., spares, support equipment, technical data, IUID, Serialized Item Management, etc.) commensurate with the host system or component maintenance concept and product support strategy/plans. See product support/sustainment planning requirements in this instruction.

9.3.3.7. When considering modification proposals, approval authorities should seek the most cost-effective solution over the system’s life cycle and determine availability, suitability, and supportability of considered and selected solutions.

9.3.4. Safety Modifications. Safety modifications are permanent modifications correcting materiel or other deficiencies which could endanger the safety or health of personnel, cause the loss of, or extensive damage to, systems or equipment (including cyber intrusion), or irreversible significant environmental impact. Safety modifications are also conducted to correct materiel deficiencies which causes a Class A mishap, per the provisions of DAFI 91-204, *Safety Investigations and Reports*.

9.3.4.1. The lead command in conjunction with the PM designates permanent modification proposals as safety modifications if they meet the following criteria, whether directly associated with a Class A mishap or not.

9.3.4.1.1. The underlying deficiency has been determined by the PM to be a “high risk” or “serious risk” as defined in MIL-STD-882E of causing a mishap.

9.3.4.1.2. The Chief of AF Safety and decision authority concurrence with the designation as a safety modification.

9.3.4.1.3. The PM has performed a risk analysis to determine the proposed modification is technically feasible, operationally effective, and sustainable.

9.3.4.2. Safety modifications are given priority for funding and implementation over all other pending modifications.

9.3.4.3. Safety modifications are accomplished in accordance with the provisions of this instruction; however, the PM may deviate from the provisions of this chapter when necessary to prevent loss of life or minimize risk to personnel. With the prior coordination of the lead command, the PM may issue interim procedures or operating restrictions as necessary prior to implementing a safety modification. **Note**: Aircraft grounding can only occur in accordance with **Chapter 4**.

9.3.4.4. Safety modifications which implement FAA-issued airworthiness directives and Service Bulletins comply with AFPD 62-6 and DAFI 62-601. Modifications which implement FAA issued airworthiness directives and Service Bulletins receive priority for funding and implementation when such modifications are necessary to preserve certification and comply with Federal Aviation Regulations and standards.

**9.4. Modifications to Assets Planned for Retirement (or Sunset Provisions).** Modifications to any aircraft (i.e., a given tail number), weapon, or other item of equipment that the SECAF plans to retire or otherwise dispose of within five years after the date on which the modification would be completed, are prohibited in accordance with Title 10 USC Section 2244a, *Equipment Scheduled for Retirement or Disposal: Limitation on Expenditures for Modifications*. **(T-0)** Exceptions to this prohibition include modifications which:

9.4.1. Cost less than $100,000 per modification as described in the prohibition (any aircraft [i.e., a given tail number], weapon, or other item of equipment such as a space system).

9.4.2. Have reusable items of value installed as part of the modification that are, upon the retirement or disposal of the modified item, to be removed from that item, refurbished, and installed on another piece of equipment, and the cost of this modification, including the cost of removal and refurbishment of reusable items of value, is less than $1 million.

9.4.3. Are designated as safety modifications.

9.4.4. 10 USC Section 2244a grants authority to the SECAF to waive the prohibition when the SECAF has determined the modification to be in the national security interest of the United States and has so notified the Congressional Defense Committees in writing.

**9.5. Additional Modification Requirements.** In addition to the general modification program requirements prescribed in this DAFI, modification activities involving certain types of materiel may impose additional management requirements on the using/lead command and PM.

9.5.1. Modifications in response to validated UCA requirements (JUON, JEON, UON, or top-down directed requirements) are streamlined. For UCA program modifications, modify the minimum number of systems needed for testing and in-theater operations, and implement as line-replaceable “Group B” modification kits to the maximum extent possible. **Note**: The UCA Decision Memorandum fulfills AF Form 1067 parts I, II, III and V; Part IV is accomplished by the PM. In conjunction with the 1067, the validated requirements document is used for configuration control and to manage installation and removal of UCA program modifications pending a decision to determine whether to return the system or subsystem item to its original configuration or implement an enduring capability. See **Attachment 2** for more information.

9.5.2. Modifications to aircraft are to comply with the airworthiness certification requirements in AFPD 62-6 and AFI 62-601.

9.5.3. A SEEK EAGLE request is used to establish aircraft-stores configuration certification requirements for aircraft stores configuration, flight clearance, TOs, or AFPAM 63-129.

9.5.3.1. Modifications involving non-nuclear munitions and their associated support and training equipment must be certified in accordance with AFI 91-205, *Non-Nuclear Munitions Safety Board*. Modifications involving nuclear munitions and their associated support and training equipment must be certified in accordance with DAFI 91-101 and AFI 63-125.

9.5.3.2. Modifications involving directed energy weapons must comply with AFI 91- 401, *Directed Energy System Safety*.

9.5.3.3. A SEEK EAGLE Request does not replace AF Form 1067 and is not used to validate requirements for modification of aircraft or stores but may be used to supplement an AF Form 1067.

9.5.4. Modifications to nuclear certified equipment or items are to also meet the requirements in DAFI 91-101 and AFI 63-125.

9.5.5. Modifications to devices which transmit electromagnetic energy must include appropriate spectrum certifications required by DoDI 4650.01, DAFI 17-220, MIL-STD-464, *Electromagnetic Environmental Effects*, and MIL-STD-461G, *Requirements for the Control of Electromagnetic Interference Characteristics of Subsystems and Equipment*.

9.5.5.1. Consult DAFI 17-220 for specific guidance related to the certification of Radio Frequency dependent devices and applicable certification of modified spectrum dependent systems for worldwide DoD use.

9.5.5.2. Radio modification efforts are subject to additional OSD policy requirements.

9.5.5.3. Modifications to Electronic Warfare Integrated Reprogramming Equipment are subject to DAFMAN 10-703, *Electromagnetic Warfare Integrated Reprogramming*. Electronic Warfare Integrated Reprogramming equipment is used to make changes to operational electronic warfare hardware and software systems, threat simulators and emitters, aircrew training devices, and other related support systems.

9.5.6. Modifications to defense communications system equipment, such as the Defense Switching Network and defense communications satellite terminals are initiated, approved, and conducted in coordination with the DISA. DISA designates DoD communications equipment as defense communications systems configuration items. DISA participates in configuration control processes and boards for defense communications systems configuration items modifications executed by the DAF.

9.5.7. Modifications to intelligence and information systems and networks may be subject to other requirements (e.g., interoperability, cybersecurity, spectrum management). Contact AF/A2/6 or SF/S2 for additional information.

9.5.8. Modifications to SE/ATS systems follow guidance contained in this instruction.

9.5.8.1. For common SE/ATS modifications, coordinate with the designated support equipment Product Group.

9.5.8.2. For unique SE/ATS modifications, coordinate with the PM.

9.5.9. Modifications involving materiel subject to Serialized Item Management comply with DoD and DAF policies which require DAF materiel to be equipped with standardized, machine-readable markings providing globally unique and unambiguous identification of individual assets. Marking modifications to DAF materiel must comply with Serialized Item Management policy provisions contained in DoDI 8320.03, DoDI 8320.04, DoDI 4151.19, and this instruction. The PM ensures all modification activities are conducted in compliance with DFARS 211.274, *Item Identification and Valuation Requirements*, DFARS 252.211-7003, *Item Identification and Valuation*, DFARS 252.211-7007, *Reporting of Government-Furnished Property*, and MIL-STD-130N, *Identification Marking of U.S. Military Property*.

9.5.10. Serialized item management requirements such as IUID registration and marking are considered for temporary modifications based on the long-term strategy of the modification. Assets used for temporary modification do not require IUID marking and registration the AF Form 1067 states the strategy is dispose of the assets at de-modification.

9.5.11. AF operational training system modifications follow guidance contained in AFI 16-1007. Additionally, modifications to prime systems which affect corresponding training equipment must be coordinated with the appropriate training device PM as part of the overall modification.

9.5.12. The provisions of this DAFI are applicable to modifications involving DAF materiel sustained via CLS contracts. The PM ensures CLS contracts include specific work requirements, terms, conditions, and deliverables necessary to satisfy the modification and configuration management requirements prescribed in this instruction.

9.5.13. All modifications (temporary or permanent) involving FMS or security assistance assets are conducted in accordance with existing management arrangements between the U.S. Government and the affected foreign government(s). In the event existing management agreements do not specifically or sufficiently address the modification of FMS and security assistance assets, the PM contacts the AFSAC Directorate to coordinate modification activities involving such assets. Modifications pursuant to International Armaments Cooperation Agreement follow guidance in AFI 16-110, *US Air Force Participation in International Armaments Cooperation (IAC) Programs*.

9.5.14. Modifications to assets under the management purview of a joint program office are conducted in accordance with the designated lead Service's modification management process/procedures, or as established in a MOA.

9.5.15. Modifications to systems and equipment developed by the Missile Defense Agency and transferred to the DAF will comply with configuration management procedures established in a MOA between the DAF and the Missile Defense Agency. If DAF funds are used to implement modifications to an in-service Missile Defense Agency-developed system, apply the conditions of this instruction in addition to modification program management and configuration management agreements between the DAF and the Missile Defense Agency.

9.5.16. Modifications to DAF assets on loan to a non-DAF agency (e.g., DIA, security assistance organizations, etc.) are initiated, approved, and conducted in accordance with a MOA between the DAF and the using agency. Modifications to DAF-common assets that are initiated by a non-DAF agency are be reviewed, validated, approved, and evaluated for DAF-wide application by the lead command or commodity manager with overall management responsibility for the asset.

9.5.17. Technology demonstrations requiring modification of an in-service DAF asset to evaluate the capability or technology follow guidance in this instruction. The modifications necessary to conduct a testing demonstration are normally approved and installed as Type-2 modifications.

9.5.18. Modifications to aircraft or remotely piloted aircraft creating a change to standard flight manuals must comply with the modification flight manual guidance provided in AFI 11-215. Modification introduced changes include but are not limited to changes in the cockpit and flight crew station, changes in aircraft and system operating limits, and changes to crew procedures.

9.5.19. The PM will assess modifications for ESOH risks and hazardous materials. Identified ESOH risks and hazards are to be integrated into the overall platform ESOH risk and hazard tracking system(s). (waivable by the PEO)

**9.6. Modification Fielding and Installation.** Permanent modifications are generally installed on DAF weapon systems and equipment using a TCTO prepared in accordance with this instruction and TO 00-5-15, *Air Force TCTO Process*. Contractor provided field Service Bulletins and FAA issued airworthiness directives and Service Bulletins may also prescribe specific modification installation procedures and requirements. Temporary modifications are generally installed using a technical or engineering data package describing the system or component engineering changes and outlines the component modification instructions to be accomplished. This data package must be approved by the applicable system or component PM prior to installation (waivable by the PEO). The PM, lead command, and test agency coordinate as necessary to define specific technical or engineering data package requirements.

9.6.1. The PM coordinates modification installation requirements and timelines with the lead command and all affected organizations, including Product Support Providers (waivable by the PEO). The PM ensures modification installation activities do not begin until the lead and using commands have identified and resolved any fielding issues associated with the modification (waivable by the PEO). Additionally, the PM ensures sufficient time is provided to develop and field any infrastructure, environmental analysis, or other product support requirements necessary to operate and sustain the modification once it is fielded. **(T-1)**

9.6.2. Temporary and permanent modifications may be installed at base level by organic unit/MAJCOM/FLDCOM personnel that initiated the modification proposal, by PM and organic field teams, and by CLS personnel, or a combination thereof. Modifications may also be conducted in conjunction with depot maintenance activities, at contractor facilities, or a combination thereof.

9.6.3. Upon receipt of the approved modification proposal document from the lead command, the PM coordinates the modification installation schedule with all affected organizations. Prior to trial kit installation, T&E activities, or field operation, the Chief Engineer, in support of the PM, ensures that any requisite certifications that accompany the modification are in place, such as safety of flight releases, airworthiness approvals or nuclear certifications (waivable by the PEO). All modification installation documents are approved by the PM (waivable by the PEO).

9.6.4. The PM ensures all modifications include a plan for product support and logistics requirements as described in this instruction and AFPAM 63-129 to ensure the modification is sustainable for the duration of its intended life cycle (waivable by the PEO). Generally, this involves updating the existing weapon system LCSP to reflect modification requirements in terms of all applicable integrated product support elements. For temporary modifications, the PM collaborates with lead/using command(s) and participating test organizations to determine the minimal support requirements and responsibilities necessary to accomplish, operate and maintain the modification during its limited installation lifespan.

**9.7. Modification Close-out.** The PM will ensure proper disposal for modification kits that become excess (waivable by the PEO). For configuration control and management purposes, a complete copy of the modification package will be maintained in accordance with AFI 33-322 and the AF Records Disposition Schedule.

9.7.1. All temporary modifications close out when they are replaced by permanent modifications or removed from the host system or component as specified in the approved AF Form 1067.

9.7.2. When a TCTO is or will be rescinded, and there are excess kits, the PM verifies that all affected systems/items/equipment spares have been modified and provide supply chain managers with disassemble/disposition instructions for the excess kits per AFI 23-101.

9.7.3. Technical data, which exists prior to the modification, must be retained until all affected systems/items/equipment have been modified. When the last asset has been modified, all pre-existing data must be updated by formal changes or revisions to technical data/manuals, thus ensuring the current configuration is reflected. **(T-1)**

9.7.4. The PM will record status and financial data to support change in valuation of assets caused by a modification. Reference local AFLCMC or SSC procedures for additional guidance on valuation of modifications. **(T-0)**

9.7.5. When the modification has been completed, shipping or disposition instructions for GFP must be provided. **(T-0)** The PM is notified when modification kit installation has been completed and the TCTO has been rescinded.

9.7.6. Unsuccessful completion of the modification must also be documented including the reason for termination and any plan to recover assets (waivable by the PEO).

**9.8. Modification Management Reporting.** See **Chapter 11** for more information.

# Chapter 10

## ACQUISITION WORKFORCE MANAGEMENT AND PROFESSIONAL DEVELOPMENT

**10.1. Overview.** The purpose of this chapter is to identify acquisition workforce management and professional development requirements and responsibilities. The 1990 Defense Acquisition Workforce Improvement Act (DAWIA), codified at 10 USC Sections 1701-1766, along with DoDI 5000.66, *Defense Acquisition Workforce Education, Training, Experience, and Career Development Program* provides specific minimum qualification standards of those personnel performing functions integral to the acquisition process and defines Critical Acquisition Positions. The law requires DoD to formalize career paths for personnel who wish to pursue careers in acquisition to develop a skilled, professional workforce.

**10.2. Acquisition Workforce.** For the purposes of this publication, the acquisition workforce is defined as those military DAF individuals and permanent civilians assigned to positions having predominantly acquisition functions as defined by DoDD 5000.01, DoDI 5000.02, and DoDI 5000.66. These positions are designated by acquisition coding in the manpower and personnel systems of record.

**10.3. Responsibilities and Authorities.** SAF/AQ, in collaboration with SAF/SQ, establishes policy and provides DAF oversight for acquisition workforce management and professional development, and in accordance with DoDI 5000.66, is responsible for implementing the OSD Acquisition Workforce Education, Training, and Career Development Program in the DAF on behalf of the SECAF. For more detailed guidance, please see the program guide in the Acquisition Functional area of the AF Portal: **https://www.my.af.mil/gcss-af/USAF/site/ACQUISITION/Career**.

10.3.1. Director, Acquisition Career Management (DACM) for the DAF. SAF/AQ designates the Director, Acquisition Career Management (DACM) with authority to assist the SAE for USAF and USSF with oversight and execution of acquisition workforce responsibilities. Responsibilities of the DACM include:

10.3.1.1. Developing, implementing, and overseeing policies and procedures for the DAF Acquisition Professional Development Program (APDP).

10.3.1.2. Representing the DAF as point of contact with Defense Acquisition University (DAU) and other DoD Components for matters relating to the OUSD(A&S) Workforce Education, Training, and Career Development Program.

10.3.1.3. Managing training matters associated with the DAWIA implementation, including DAU course quotas.

10.3.1.4. Managing the DAF share of the Defense Acquisition Workforce Development Account.

10.3.1.5. Establishing programs to provide career and talent development opportunities for the acquisition workforce in accordance with the DAWIA, associated regulations, and DAF acquisition workforce human capital strategic planning objectives.

10.3.1.6. Establishing and maintaining acquisition career management information systems for experience, training, waivers, continuous learning, certification, and acquisition personnel records review as needed to execute acquisition workforce responsibilities.

10.3.2. Acquisition Functional Area Leaders. SAF Acquisition Functional Area Leaders, appointed by the SAEs advise the DACM on acquisition workforce management issues and assist in execution of acquisition workforce responsibilities in respective acquisition functions. SAF Acquisition Functional Area Leaders are responsible for identifying, in coordination with the DACM, the USAF and USSF requirements for acquisition training, functional credentials and the certification (education, training, and experience) standards to OUSD(A&S). SAF Acquisition Functional Area Leaders appoint a functional APDP Manager, as applicable, to manage APDP responsibilities for DAF members in acquisition functional areas. Provide oversight and guidance on acquisition training continuous learning and training credentials. Oversight of acquisition functional experience verification by designated subject matter experts in respective functional areas. Manage DAF level functional acquisition awards and nominations for acquisition awards at OSD in relevant functional areas.

10.3.3. MAJCOM/FLDCOM Commanders. MAJCOM/FLDCOM s are responsible for designating military and civilian acquisition positions within their respective organization in accordance with 10.4.1. MAJCOMs/FLDCOMs will ensure assigned acquisition positions are properly coded within the appropriate manpower and personnel data systems and will review these positions periodically to ensure compliance with APDP coding policy. MAJCOMs/FLDCOMs will provide a single MAJCOM/FLDCOM APDP point of contact to SAF/AQH and will appoint qualified Functional APDP Managers and APDP representatives within their organizations, as required. For more information, see detailed APDP guidance in the acquisition functional area of the AF Portal.

10.3.4. Supervisors of Individuals Assigned to Acquisition Positions. Supervisors are responsible for notifying personnel in their organization whose positions are designated as acquisition positions about their APDP responsibilities to include the functional category and level of required certification, and if appropriate, tenure agreement, and all statutory requirements. Supervisors assist acquisition workforce members in developing and executing Individual Development Plans (IDP) to accomplish APDP requirements including statutory and assignment specific training/education, certification, tenure, and professional currency/continuous learning standards.

10.3.5. Individuals Assigned to Acquisition Positions. Individuals assigned to acquisition coded positions are required meet all APDP requirements including statutory and assignment specific training/education, certification, tenure, and professional currency/continuous learning standards. **(T-0)**

**10.4. AF Acquisition Professional Development Program.** The APDP is designed and managed to facilitate the development, credentialing, and maintenance of a professional acquisition workforce. Refer to the Career/APDP section in the acquisition functional area of the AF Portal for detailed information and implementing instructions (hereafter referred to as “detailed APDP guidance”).

10.4.1. Designating Acquisition Positions. If the duties of a position (regardless of series) are predominantly acquisition functions as defined by DoDD 5000.01, DoDI 4205.01, *DoD Small Business Programs* (*SBP*), DoDI 5000.02, and DoDI 5000.66, then the position falls under the provisions of this DAFI and is coded as an acquisition position in accordance with detailed APDP guidance. **(T-1)** In addition to Regular AF, USSF and permanent civilians, Active Guard and Reserve (AGR) and civilian over hire positions may be designated as acquisition positions. Acquisition coded positions require certification. Non-AGR military guard and reserve positions may be coded as acquisition positions for training priority management only. See the certification paragraph below and the detailed APDP guidance for additional information.

10.4.1.1. APDP position coding identifies required Functional Area certification tier and based on requirements of the position.

10.4.1.2. All 63XX positions are considered acquisition positions and coded in accordance with best fit for the acquisition function of the position and detailed APDP guidance.

10.4.1.3. All civilian 1102 and all Active Duty and AGR military 64XX and 6C0X1 positions are considered acquisition positions and are only coded Contracting. Other occupational series or AFSC may not be coded as contracting.

10.4.2. Certain senior level acquisition-coded positions are designated as Critical Acquisition Positions (CAP) based on the criticality of the position to an acquisition program, in accordance with DoDI 5000.66. Personnel assigned to CAPs provide needed acquisition experience as well as stability and accountability to a program. Positions that require CAP designation include:

10.4.2.1. Senior Executive Service (SES), Colonel (O-6), and General Officer acquisition-coded positions.

10.4.2.2. Senior Materiel Leader positions (civilian and military) of acquisition organizations directly responsible for ACAT I and II programs are coded Program Management Advanced and require completion of the training statutorily required for ACAT I and II PMs.

10.4.2.3. The following positions that are a subset of NH-IV (or equivalent), and O-5 acquisition-coded positions:

10.4.2.3.1. All acquisition-coded Materiel Leader (civilian and military) positions.

10.4.2.3.2. Civilian positions with direct responsibility and accountability for an acquisition program, effort, or function directly supporting an ACAT program, and have duties and responsibilities that require a three-year tenure for program stability. For more information, see detailed APDP guidance.

10.4.2.3.3. Military positions with direct responsibility and accountability for an acquisition program, effort, or function directly supporting an ACAT program, and have duties and responsibilities that require a three-year tenure for program stability. This includes all acquisition-coded positions requiring officers graded at the O-5 level or above, including but not limited to Materiel Leader positions. O-5 positions routinely filled by an officer of lower rank do not require a CAP designation.

10.4.2.4. Further examples of positions that should be coded CAP can be found in the detailed APDP guidance.

10.4.2.5. O-4/GS-13 (or equivalent) or lower grade positions are not coded as CAPs.

10.4.2.6. All CAPs are coded to highest certification tier available to the functional area of the position.

10.4.2.7. Individuals assigned to CAPs incur a three-year tenure.

10.4.2.7.1. Civilians: DD Form 2888, *Critical Acquisition Position Service Agreement*, is used to document the CAP tenure agreement. Individuals sign DD Form 2888 (Block 6a) to capture tenure agreement and document in Defense Civilian Personnel Data System. Approving Official on DD Form 2888 (Block 6c) is the hiring official.

10.4.2.7.2. Military: AF Form 63, *Active Duty Service Commitment (ADSC) Acknowledgement Statement* is used in lieu of the DD Form 2888, with the Assignment Availability Code 59 updated for the required tenure.

10.4.2.7.3. Tenure periods for ACAT I Program Managers are applied based on two distinct periods, Program Definition and Program Execution. A single PM is assigned for each of these periods unless the PM is removed for cause or for exceptional circumstances (e.g., period longer than appropriate for a single person).

10.4.2.7.4. Program Definition period. The tenure for ACAT I PM begins at an "initiation" point that falls between the Analysis of Alternatives and six months prior to RFP Release Decision Point (varies by program) and ends at Milestone B.

10.4.2.7.5. Program Execution period. The tenure for ACAT I or IA PM begins following Milestone B approval and runs until IOC.

10.4.3. Key Leadership Positions. A subset of Critical Acquisition Positions that require SAE oversight of position qualification requirements and tenure are designated Key Leadership Positions (KLPs). KLPs are determined and designated by the SAE. Further guidance on KLPs is outlined in AFI 36-1301 and detailed APDP guidance.

10.4.3.1. Civilian: DD Form 2889, *Critical Acquisition Position Service Agreement Key Leadership Position (KLP)*, is used to document the KLP tenure agreement. Individuals sign DD Form 2889 (Block 6a) to capture tenure agreement and document in Defense Civilian Personnel Data System. Approving Official signature on DD Form 2889 is not required unless the tenure period is other than the default criteria established by the SAE.

10.4.3.2. Military: An AF Form 63, is completed to cover the tenure period (AFI 36-2100, *Military Utilization and Classification*), and an Assignment Availability Code 59 is updated for required tenure as outlined in DAFI 36-2110, *Total Force Assignments*, therefore, the DD Form 2889 is not required.

10.4.3.3. Assignment Availability Code 59 and Regular AF Service Commitment are removed when a military member is no longer serving in a KLP and prior to the expiration of the updated tenure period with an SAE approved waiver.

10.4.4. Certification. Ensure individuals assigned to acquisition positions meet all position certification requirements, in accordance with DoDI 5000.66. The DACM uses an automated online certification tool to execute the certification process. Acquisition workforce members receive certification via the online certification system found on the Career/APDP section in the acquisition functional area of the AF Portal. Currently military and government civilian employees who are not currently occupying acquisition coded positions may also receive certification if the certification tool documents that the current requirements have been met. For implementing instructions including acquisition record updates and POCs, refer to the detailed APDP guidance.

10.4.4.1. Criteria for Manual Certification. Under exceptional circumstances, certifications may be processed manually rather than using the online certification tool. As delegated by the DACM, Certifying Officials serve as the DAF approval authority for issuing acquisition professional certification credentials manually in accordance with DoDI 5000.66. Certifying Officials are accountable for ensuring current functional area education, training, and experience standards are met for certification. The DACM issues criteria for Certifying Officials. Refer to the detailed APDP guidance for further information.

10.4.4.1.1. Delegation of Manual Certification Authority. The DACM may delegate certification authority for Foundational, Practitioner, and Advanced Certification to the following (where Certifying Official criteria are met):

10.4.4.1.1.1. HAF Functional Managers.

10.4.4.1.1.2. MAJCOM/FLDCOM Headquarters.

10.4.4.1.1.3. Others as identified in detailed APDP guidance.

10.4.4.1.2. As delegated by the DACM, manual certification authority remains with the SAF Acquisition Functional Area Leads for DAF personnel assigned to DRUs, FOAs, Unified Commands, DoD Agencies, and other Components.

10.4.4.1.3. As delegated by the DACM, SAF Functional Area Leaders are the Certifying Official for GO and SES members who meet functional category acquisition certification requirements. This authority may not be re-delegated.

10.4.4.1.4. The DACM may delegate authority to adjudicate acquisition experience and approve acquisition course fulfillment for the purpose of documentation in the system of record to support certification. Refer to detailed APDP guidance for further information.

10.4.4.1.5. Acquisition experience verification. The DACM may delegate experience verification to be used for certification to designated acquisition functional area SMEs (where SME criteria are met):

10.4.4.1.5.1. SAF Functional Area Leaders.

10.4.4.1.5.2. Major and Field Command Headquarters Acquisition Functional Managers and designated Functional SMEs.

10.4.4.1.5.3. Acquisition Center Functional Managers and designated Acquisition Functional SMEs.

10.4.4.1.5.4. Other acquisition Functional Area SMEs as identified in detailed APDP guidance.

10.4.5. Professional Currency.

10.4.5.1. Individuals assigned to acquisition-coded positions maintain professional currency in their acquisition functional area by meeting mandatory DoD and AF Continuous Learning standards and recording Continuous Learning accomplishments in Acq Now (**https://acqnow.atrrs.army.mil/**). **(T-0)** Responsibility falls upon the individual and their supervisor to ensure their Continuous Learning aligns with their IDP and currency is measured in performance feedback. Individuals on acquisition-coded positions who fail to meet the professional currency requirement are considered non-current. Annual ethics training is the only training requirement common across the entire acquisition workforce. For details on execution of continuous learning, refer to the detailed APDP guidance.

10.4.5.2. Officers who are not Continuous Learning current as of the Materiel Leader board date are ineligible. Civilians who have not achieved the Continuous Learning standard within a two month period after becoming non-current are not eligible for acquisition Civilian Material Leader board or Strategic Leader Program positions. In addition, individuals require Continuous Learning currency to compete for special acquisition career development programs or DAF acquisition awards unless a waiver is granted. For more details, refer to the detailed APDP guidance.

10.4.5.3. Online and instructor-led courses required for APDP certification and continuous learning may be accomplished during dedicated duty time either during the normal duty day in the workplace, or through such means as organization approved alternate work schedules, or teleworking, subject to supervisor approval. Individuals should not be expected to accomplish required training during off-duty hours.

10.4.5.4. Guard and reserve personnel possessing an acquisition DAF Specialty Code may enroll in DAU courses for professional development including all courses required for DAWIA certification tiers.

10.4.5.5. Members of the Acquisition Workforce on Critical Acquisition Positions are expected to have recent acquisition experience and retainability.

10.4.6. Waivers. DAWIA and DoD policy permit waivers for position qualification requirements or tenure requirements on a case-by-case basis when in the best interests of the DAF. Process waiver requests, coordination, and approval/disapproval via the OUSD(A&S) Workforce Waiver Tool. Refer to detailed APDP guidance for further information.

10.4.6.1. A position requirements waiver does not confer certification or permanently obviate the acquisition related requirements of the position.

10.4.6.2. The SAE (or designated representative) must approve waivers from the approved tenure commitment for KLPs.

10.4.6.3. Delegation of Waiver Approval Authority.

10.4.6.3.1. The DACM office will receive KLP waiver requests from the field and coordinate SAE disposition.

10.4.6.3.2. Authority for Senior Contracting Official position requirements waivers is delegated to the Deputy Assistant Secretary (Contracting) (SAF/AQC), in coordination with SAF/SQ, for personnel assigned to space organizations. This authority may not be re-delegated. Waivers must be coordinated through the appropriate Head of Contracting Authority.

10.4.6.3.3. The DACM or Deputy DACM grants waivers for position and tenure requirements for all non-KLP critical acquisition positions.

10.4.6.3.4. The DACM may delegate waiver authority for acquisition position requirements. Refer to detailed APDP guidance for further information.

10.4.6.3.5. The PEO, Deputy PEO, or Director is given authority to waive the requirement for a new tenure agreement when an individual is reassigned from a non-KLP critical acquisition position within the PEO portfolio or directorate to another non-KLP critical acquisition position within the same PEO portfolio or directorate. This authority does not obviate the requirement for a tenure waiver for reassignment when a tenure agreement is in effect.

# Chapter 11

# REPORTING

**11.1. Reporting Requirements.** The reporting guidelines below are applicable to all investment activities. Programs follow DoD 5000 series for DoD and congressional reporting requirements.

## 11.2. Investment Fund Reporting.

11.2.1. Investment Fund Reporting. The PM, or equivalent, ensures all efforts with investment funds AF RDT&E 3600 (Budget Activity [BA] 1 through BA7), SF RDT&E (e.g., 3620), AF Procurement (e.g., 3010, 3011, 3020, and 3080), and SF Procurement (e.g. 3022) use the Comprehensive Cost and Requirement System (CCaR) to manage and execute program funds. Investment fund reporting is documented on the IML which is maintained by SAF/AQX.

11.2.1.1. For investment funds, acquisition/PEO organizations use the CCaR to manage and execute funds unless a waiver is granted from SAF/AQX or SAF/SQX (if a space system).

11.2.1.2. The program or activity that has the funds included in the program baseline reports the funds. Any funds outside of the baseline are reported by the activity with the direct budget authority. Obligation and expenditure status is reconciled and published to Executive CCaR to align with the MAR schedule.

11.2.1.3. CCaR use continues as long as investment dollar funding is available for execution.

11.2.1.4. Program office must enter their approved and required budget and supporting IMS with anticipated major deliverable milestones across the FYDP. The approved budget is equal to the enacted appropriation adjusted for enacted rescissions and approved reprogramming.

11.2.2. All activities required to be listed on the IML are also required to enter basic program data into The CCaR and PMRT. The PM enters all mandatory data at initial entry onto the IML, through CCaR, and updates prior to every major program milestone and following any significant program change. The PM reviews, updates, and ensures consistency of program data in CCaR and PMRT at least twice per year prior to the 1st of March and October or upon request from SAF/AQX or SAF/SQX. The minimal data entry into the applicable acquisition data system includes:

11.2.2.1. Name, program description, Program Element (PE), and Budget Program Activity Code. Ensure consistent information between the AML/IML and the President's Budget submission.

11.2.2.2. Key Personnel (MDA, technology executive officer or PEO, and PM).

11.2.2.3. Contract Data (contract number [including task or delivery order(s), if applicable], prime contractor name for each contract, and business segment).

## 11.3. Investment Master List, Acquisition Master List, and AML-Exempt activities.

11.3.1. Investment Master List. The IML includes both the AML and AML Exemptions. Investment funds are mapped to an IML activity. Program offices map RDT&E, Procurement investment funds, and program data by using the CCaR to manage and execute programs. Refer to **Figure 11.1** for information on the relationship between IML, AML, and AML-Exempt categorization.

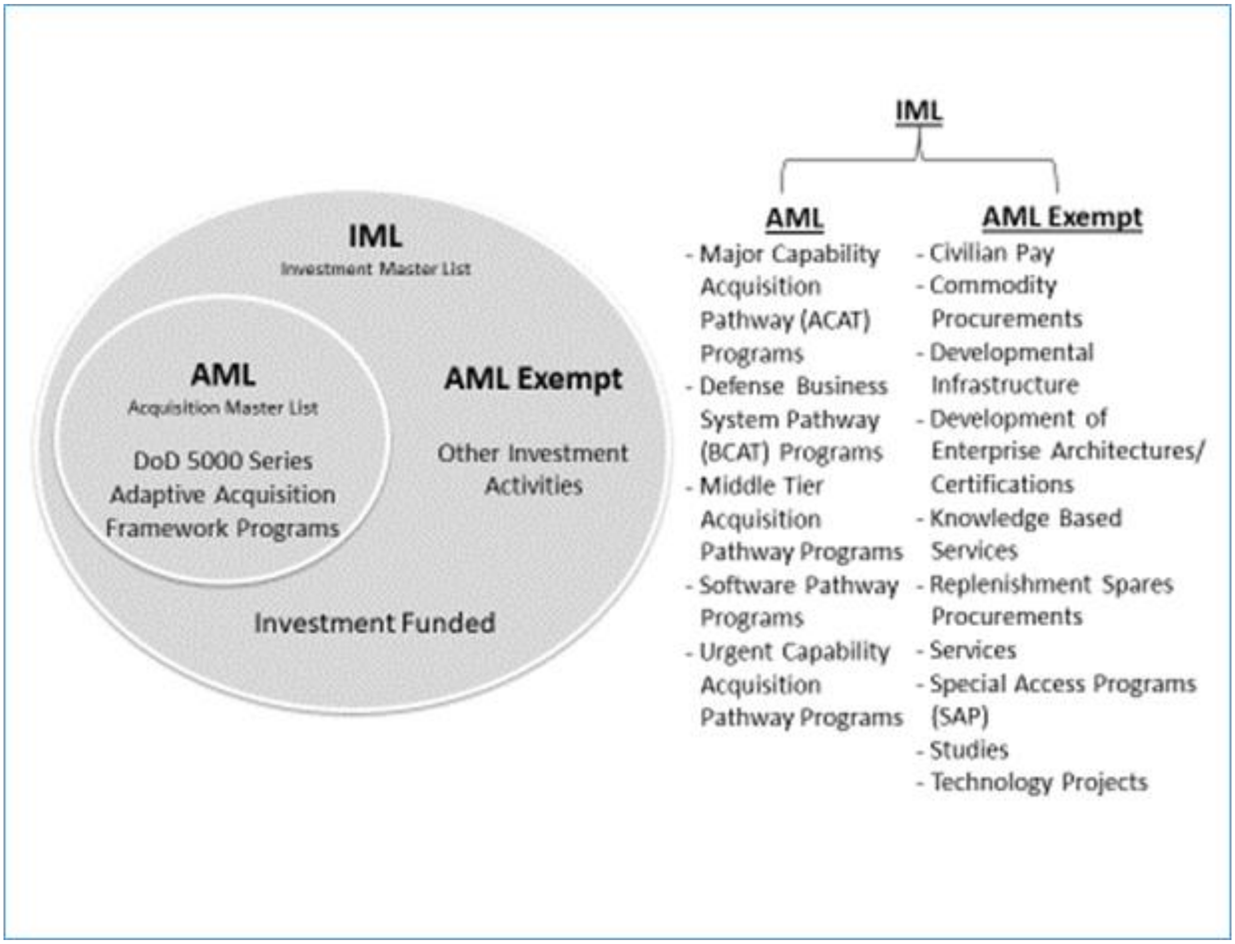
11.3.1.1. Additions and Changes. Submit all IML updates, additions, changes, and exemption requests using the Comprehensive Cost and Requirement System Investment Master List tool. SAF/AQX is the final approval authority for any IML additions. SAF/AQXS final approval is waived for all projects in the Technology Executive Officer (TEO) portfolio and AFRL/XP is the sole approver of R&DML projects captured in the IML.

11.3.1.2. Review. Any organization requiring a determination on an activity that could be considered either an AML or AML-Exempt activity should submit the activity to SAF/AQX or SAF/SQX for categorization. SAF/AQX or SAF/SQX will review the activity and determine categorization. Activities can be submitted for review at any phase in the program life cycle; refer to the applicability paragraph for how categorization affects program requirements.

11.3.1.3. Categories. All activities on the IML are categorized as either active or inactive dependent upon whether investment funds are being executed. In addition, inactive AML programs are categorized as either open or closed dependent on phase and ACAT.

11.3.1.4. FMS programs are not included on the IML; however, the PM for FMS programs use the PMRT MAR to capture specified programmatic, contracting, and financial data. Reference AFMAN 16-101 for guidance.

**Figure 11.1. IML, AML, AML-Exempt Relationship.**


IML
Investment Master List
AML
Acquisition Master List
DoD 5000 Series Adaptive Acquisition Framework Programs
AML Exempt
Other Investment Activities
Investment Funded
IML
AML
- Major Capability Acquisition Pathway (ACAT) Programs
- Defense Business System Pathway (BCAT) Programs
- Middle Tier Acquisition Pathway Programs
- Software Pathway Programs
- Urgent Capability Acquisition Pathway Programs
AML Exempt
- Civilian Pay
- Commodity Procurements
- Developmental Infrastructure
- Development of Enterprise Architectures/ Certifications
- Knowledge Based Services
- Replenishment Spares Procurements
- Services
- Special Access Programs (SAP)
- Studies
- Technology Projects

11.3.2. Acquisition Master List. The AML is the consolidated list of all DAF AAF programs except Acquisition of Services (reference AFI 63-138 *Acquisition of Services* for reporting acquisition of services) regardless of the categorization level or life cycle phase. Programs will remain listed on the AML for all life cycle phases but will be categorized dependent upon funding and acquisition status. Inclusion on the AML does not constitute program New Start approval and does not constitute authority to commit, obligate, or expend funds.

11.3.2.1. The PEO ensures efforts meeting the following requirements are included on the AML (waivable by the SAE):

11.3.2.1.1. MCA Pathway (ACATs), MTA Pathway, UCA Pathway, DBS Pathway (BCATs), or SWA Pathway programs of any categorization responding to an approved requirement; this includes an AF Form 1067 *Modification Request*, JUONs, JEONs, UONs, or top down directed activities as identified in the AF/A5/7 Capability Development Guidebooks, Vol 2 A-H. **(T-1)**

11.3.2.1.2. Joint programs led by the DAF or another DoD Component or Government Agency with AF participation. **(T-1)**

11.3.2.1.3. Any effort or program designated as "special interest" by the DAE, SAE, or an effort requested by the SAE. **(T-1)**

11.3.2.1.4. Programs with acknowledged SAPs elements include the non-SAP components of the program on the AML.

11.3.2.1.5. MCA, MTA, UCA, DBS, and SWA programs in the O&S (or sustainment) phase not previously on the AML. **(T-1)**

11.3.2.2. Each system development, upgrade, or modification with a separate APB meeting the AML criteria is listed separately; however, activities with a separate APBs or recurring activities (e.g., Lost Cost Modifications and Service Bulletins) sharing a funding line may be combined into a single effort on the AML.

11.3.2.3. Modification programs are marked inactive once deployed and managed as part of the overall system with an existing AML record. O&S requirements in DoDI 5000.91 and this publication are met at the system level.

11.3.3. Acquisition Master List Exemptions. AML exemptions capture other legitimate DAF investment activities that are not acquisition programs.

11.3.3.1. Exemptions can be granted for replenishment spares procurements, spares procurements, commodity procurements, capital equipment replacement, civilian pay, developmental infrastructure, development of enterprise architectures/certifications, technology projects, or as directed by SAF/AQX or SAF/SQX. SAF/AQX or SAF/SQX will review and approve each request for exemption on a case-by-case basis.

11.3.3.2. Acquisition SAPs and technology efforts managed in accordance with DoDD 5205.07, *Special Access Program (SAP) Policy*, AFPD 16-7, and AFI 16-701 are exempt from posting to the AML and IML. Programs with acknowledged SAPs elements solely derived from unclassified funding shall include the non-SAP components of the program on the AML unless otherwise directed. SAPs of mixed funding (i.e., classified, and unclassified) shall consult SAF/AQL or SAF/SQX as appropriate.

11.3.4. Investment-funded programs and activities are added to the AML/IML in conjunction with the timeframe established for MAR reporting contained in **paragraph 11.4**.

**11.4. Management Acquisition Reports.** The PM completes a MAR (previously referred to as Monthly Acquisition Reports), using Then Year (TY) dollars, for all AML programs using any pathway (except services pathway). **(T-1)** Management acquisition reporting refers to both monthly and quarterly reports, depending on ACAT or equivalent level categorization as shown in **Table 11.1**.

11.4.1. MARs are required quarterly for pre-Milestone A ACAT I and ACAT II programs. Initiate reporting once President's Budget documents are submitted to Congress (e.g., FY2020 activities justified in FY2020). **(T-1)** MAR submissions for pre-Milestone A programs are only required to include the program assessment and top issues in preparation for program initiation.

11.4.2. Post-Milestone A ACAT I and ACAT II MCA programs and MTA ACAT I equivalent programs complete MARs monthly**.** **(T-1)** MCA programs initiate monthly reporting the month following MDA Milestone A approval (or designation by the MDA at MDD that the next milestone is Milestone B); MTA programs initiate monthly reporting with the first plan identification submittal. **(T-1)**

11.4.2.1. Monthly program MARs include Program Assessment and Top Issues (should be no more than 10); APB Data - Cost, Schedule, and Performance including PM estimate; Funding Execution Data; Contract Information; Additional Assessments; Program Schedule and Unconstrained 1537. **(T-1)**

11.4.2.1.1. Quarterly program MARs will consist of the same data as monthly MAR except for the Unconstrained 1537 (unless requested by SAF/AQX or SAF/SQX). **(T-1)**

11.4.3. MCA ACAT III AML programs with funding greater than $30 million in RDT&E (3600) or $50 million in procurement (30XX) over the life of the program, MTA ACAT II and III equivalent programs, and all DBS programs will complete quarterly MARs. **(T-1)** These programs may be directed by the SAE to submit reports more frequently by exception.

11.4.4. Software pathway programs will complete semi-annual MARs concurrent with OSD reporting; **(T-1)** Software pathway programs may be directed by the SAE to submit reports more frequently by exception.

11.4.5. All Urgent Capability pathway programs, to include JUON, JEON, UON, and top-down directed efforts, will complete a MAR no less than quarterly, regardless of dollar value. **(T-1)**

11.4.6. The PEO or equivalent decision authority is responsible for reviewing and approving each monthly MAR in their portfolio by the 10th working day of each month. **(T-1)**

11.4.7. Programs may only terminate or waive monthly acquisition reporting with the approval of SAF/AQX or SAF/SQX. In the CCaR, programs can submit a change request for termination of monthly acquisition reporting when 90 percent of items are delivered or 90 percent of the investment funds (RDT&E and Procurement) funding is expended. DBS efforts should submit change requests for termination prior to reaching Full Deployment Decision (or equivalent milestone). Programs are not required to submit a MAR after Full Deployment Decision.

11.4.8. The PM will complete a monthly MAR for joint programs where USAF or USSF is the lead Service. **(T-1)** For joint programs where the USAF or USSF is not the lead Service, the MARs can be waived by SAF/AQX or SAF/SQX.

11.4.9. The PM of any program included in an OUSD(A&S) Integrated Acquisition Portfolio Review (IAPR) will complete a monthly MAR regardless of type, pathway, dollar value, percent delivered/expended, or milestone achieved. **(T-1)**

11.4.10. FMS programs will use the MAR to capture specified programmatic, contracting, and financial data no less than quarterly consistent with AFMAN 16-101.

**Table 11.1. Management Acquisition Reporting Frequency.**

| CATEGORIZATION[1] | Monthly MAR | Quarterly MAR | Other/Notes |
|---|---|---|---|
| ACAT ID | X | | |
| ACAT IB | X | | |
| ACAT IC | X | | |
| ACAT II | X | | |
| ACAT III more than $30M RDT&E or $50M Procurement through system | | X [1] | |
| Middle Tier Pathway (ACAT I Equivalent) | X | | |
| Middle Tier Pathway (ACAT II or III Equivalent) | | X [1] | |
| Software Pathway | | | Semi-Annually |
| Urgent Capability Pathway | | | No less than quarterly |
| DBS Pathway | | X [1] | |
| ACAT III less than $30M RDT&E or $50M Procurement through system life (TY dollars) | | | Not required UNLESS[2] meets other criteria |
| Any programs on the IAPR | X | | Regardless of above classification or phase |
| DAF-Led Joint Programs | X | | |
| FMS | | | As required in AFMAN 16-101 |
| 1) May be directed by the SAE for more frequent reporting by exception.<br>2) Including but not limited to Joint, IAPR, or urgent capability. | | | |

**11.5. Modification Management Reporting.**

11.5.1. All modifications meeting the criteria for and managed using any acquisition pathway follow the reporting, baseline and documentation requirements specified in this DAFI. **(T-1)** The PM will collect modification data to include, at a minimum, cost, schedule, performance, test, logistics, contracts, finance, risk, and earned value (as applicable) data and report through the acquisition execution chain of authority for all other modification programs; reporting frequency will be defined by the PEO. **(T-1)**

11.5.2. Permanent modifications are financed with investment funds per DAFMAN 65-605, Vol. 1 and managed as acquisition pathway programs. Required acquisition pathway life cycle management documentation and acquisition reporting (e.g., ADM, SEP, PPP, LCSP, MAR, (not a complete list)) is either generated or updated to incorporate the modification effort as described within this instruction. Where practical, existing documentation is updated to reflect modification efforts rather than generating separate documentation.

11.5.3. Temporary modifications, whether for a mission or for T&E, will be appropriately documented in the equipment status forms and appropriate historical records. Annotation will be in the active portion of the records. **(T-1)** The temporary modification annotation remains active until the equipment is returned to the original configuration. Refer to TO 00-20-2, *Maintenance Data Documentation*, for additional guidance on documentation requirements.

**11.6. Logistics Health Assessment Reporting.** See **Chapter 7.**

**11.7. Test and Evaluation Reporting.** Refer to DoDI 5000.89_DAFI 99-103, Chapter 7.

# Chapter 12

## ACQUISITION INDUSTRIAL PREPAREDNESS

**12.1. Acquisition Industrial Preparedness Overview.** 10 USC Section 4881, *Defense Industrial Reserve*, and DoD Directive 4275.5, *Acquisition and Management of Industrial Resources*, addresses the acquisition, modernization, expansion, construction, and use of both severable and non-severable property as well as the retention, maintenance, and modernization of DoD-owned real property and plant equipment. These responsibilities are assigned to USD(A&S) and the Military Service Secretaries. Government Owned Contractor Operated DAF plants are considered Industrial Facilities (as opposed to Military Installations) and consist of DAF-controlled industrial property that may be operated in whole or in part by a contractor.

12.1.1. Per DAFPD 32-90, *Real Property Management*, SAF/IE has overall responsibility and oversight of DAF-controlled real property. This responsibility excludes the acquisition and management of industrial facilities (i.e., DAF Plants 4, 6, 42, and 44) which are the responsibility of the SAF/AQ (per HAFMD 1-10), in collaboration with SAF/SQ, for space systems and programs (per HAFMD 1-17).

12.1.2. SAF/AQ responsibility for industrial facilities is delegated to AFMC/CC, who can further delegate this authority. AFMC executes this authority through AFLCMC's Acquisition Environmental and Industrial Facilities Division (AFLCMC/EZV).

12.1.3. This chapter addresses the guidelines and provisions of DoDD 4275.5, *Acquisition and Management of Industrial Resources*, as it applies to acquiring, managing, and disposing of the DAF-owned industrial facilities defense contractors use to support government contracts. DAF Reserve and National Guard industrial preparedness activities are not addressed here.

**12.2. Industrial Facilities.** For the purposes of this chapter, Industrial Facilities are any DAF owned, leased, or controlled real property that is sustained for current or future contractor use to fulfill government research, development, test, evaluation, production, maintenance, or modification contracts, or to store production machinery and equipment in support of such activity. This includes all property (other than material, special tooling, military property, and special test equipment), such as real property, buildings, structures, improvements, and plant equipment. Real property includes land, buildings, structures, utility systems, improvements, and appurtenances. It includes equipment attached to and made part of buildings and structures (such as heating systems) but not movable equipment (such as plant equipment). **Note**: Industrial Facilities are a subset of all DAF-controlled real property; however, the term "real property" is used to describe types of industrial facilities.

12.2.1. AFMC/CC has the responsibility of managing all DAF-owned industrial facilities. AFMC helps other MAJCOM/FLDCOMs acquire, manage, and dispose of DAF-owned industrial facilities. AFMC in conjunction with SAF/AQX, provide determination of industrial facilities the DAF needs to support its acquisition programs under the industrial property account.

12.2.2. Funding for DAF industrial facilities is through investment, O&M, and lease proceeds. MILCON is not used at Industrial Facilities. Guidance is further provided in the DoD Financial Management Regulations. Other types of funding to include proceeds from the sale of excess industrial facilities may be used for the upkeep of industrial facilities. Lead commands or other DAF plant users will budget, and fund weapon system specific requirements needed at the DAF plants.

12.2.3. Consistent with the practice established in DoD issuances concerning upkeep of real property, most DAF directives dealing with real property upkeep (for example, the 32 series of publications) specifically exclude property classified as industrial facilities. However, DAF procedures for the upkeep of industrial facilities should be used as a guide.

### 12.3. Additional Responsibilities and Authorities.

12.3.1. AFMC/CC, or through their delegated authority will:

12.3.1.1. Function as the OPR for Planning, Programming, Budgeting and Execution of industrial facilities. **(T-1)**

12.3.1.2. Approve capital type rehabilitation, construction, modernization, or environmental compliance at DAF plants per DoDD 4275.5 thresholds. **(T-0)**

12.3.1.3. Ensure DAF plant requirements are prioritized, coordinated between program offices, contractor operators and facilities management personnel and that proposed requirements are evaluated against DoDD 4275.5 criteria. **(T-0)**

12.3.1.4. Maintain accountability of government property in accordance with DoDI 5000.64 and approves the disposal of AFPs using AFI 32-9004, *Disposal of Real Property*, as a guide and locally developed disposal forms. **(T-0)**

12.3.1.5. Reviews requests for facility leases and staffs them to SAF/AQX for approval and coordinates with SAF/AQX on all legislative initiatives involving AF plants. **(T-1)**

12.3.1.6. Ensure environmental impact analysis completion. **(T-0)** The environmental protection program is implemented to obtain compliance, which may include federal, state, and local laws and regulations.

12.3.1.7. Provide oversight of physical security and protection of DAF plants ensuring antiterrorism and security surveys are conducted in accordance with contract/lease agreements, and Industrial Facility applicable portions of DAFI 31-101, *Integrated Defense*, AFMAN 31-101, Vol. 1, AFI 10-245 Supplement to DoDI 2000.16, Vol 1, *Antiterrorism Program Implementation*, DoDM5100.76_DAFMAN31-101, Vol 2, *Physical Security of Sensitive Conventional Arms, Ammunitions and Explosives,* and associated AFMC supplements. **(T-1)** Facilities PCOs negotiate facilities contracts or leases in accordance with applicable FAR requirements.

12.3.2. SAF/AQX shall:

12.3.2.1. Review and staff projects, proposed facility expansion packages, and other efforts requiring SECAF, USD(A&S) approval or congressional notification as submitted by AFMC or their delegated authority.

12.3.2.2. Review and approve projects, proposed facility expansion packages, and other efforts not requiring SECAF, USD(A&S) approval or congressional notification as submitted by AFMC or their delegated authority.

12.3.2.3. Screen excess facilities with other DoD components for non-industrial requirements; and when necessary, develop and coordinate disposal reports for the House and Senate Armed Services Committees for identified excess facilities using AFI 32- 9004 as a guide.

12.3.2.4. Review and approve budget and procurement documentation (P Series) prepared by AFMC/CC, or their delegated authority.

12.3.2.5. Conduct continuous surveillance over the current use of, and future requirements for, all government-owned industrial real property and plant equipment. SAF/AQX will maximize utilization, facilitate proper allocation, and ensure proper and timely disposal arrangement for excess facilities and facilities for which continued government ownership is no longer necessary.

12.3.2.6. Approve the annual Financial Plan and delegates, to the responsible organization, the authority to approve changes to projects in the financial plan.

12.3.3. The AF Civil Engineer Office (AF/A4C) shall:

12.3.3.1. Provide civil engineering assistance and advice regarding the AF plants and approves Installation Characteristic Report per DAFI 32-9005, *Real Property Accountability*.

12.3.3.2. Provide a copy of the report to the Assistant Secretary of the AF for Installations, Environment, and Energy (SAF/IE) and to SAF/AQXE.

12.3.4. The AF Civil Engineer Center shall:

12.3.4.1. Provide civil engineering/environmental engineering/real property advisory service, industrial property disposal processing and environmental restoration support services at current and former DAF plants. **(T-1)**

12.3.4.2. Process orders using DAFI 32-9005 as a guide to record actual disposal and adjust the industrial real property record after the DAF plant is disposed. **(T-1)**

12.3.4.3. Coordinate on the Installation Characteristics Report and forwards it to AF/A4 for approval. **(T-1)**

12.3.4.4. Validate the Automated Civil Engineer System Real Property (RP)/NexGen-TRIRIGA year-end closeout report for industrial facilities and forward it to SAF/IE with a copy to SAF/AQXE. **(T-1)**

12.3.4.5. Conduct and lead the Environmental Restoration Program at each active and divested facility using Environmental Restoration Account funding and in accordance with AFI 32-7020, *Environmental Restoration Program.* **(T-1)**

12.3.4.6. Delegate fire protection authority for DAF plants to an AFMC certified fire protection engineer. **(T-2)**

**12.4. Permissible Funding.** AFMC/CC, or through their delegated authority will execute financial management of assigned DAF plants. The DAF Industrial Preparedness Program, Program Element 0708011F is the primary funding mechanism for AF industrial facilities with lease revenues, proceeds from the sale of industrial facilities, and development or acquisition programs using DAF plants also used as contributing sources. Funding for restoration projects at DAF industrial facilities is provided by Environmental Restoration Program Element 078008F.

**12.5. Leases.** Title 10 USC Section 2667, *Leases: Non-Excess Property of Military Departments and Defense Agencies*, provides the SECAF authority to lease non-excess real or personal property. This is a tool used to manage, maintain, and sustain the industrial base capability of DAF plants. Such leases may provide for the alteration, repair, or improvement of the property by the lessee as payment of part or all the consideration for the lease. The DAF uses this provision to ensure DAF plants remain safe, suitable, and effective facilities for their intended purpose. HAFMD 1-10 delegates this authority to SAF/AQ, which is further delegated to SAF/AQX.

ANDREW P. HUNTER
Assistant Secretary of the Air Force
(Acquisition, Technology & Logistics)

## Attachment 1

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### *Prescribed Forms*

AF Form 1067, *Modification Proposal*

### *Adopted Forms*

AF Form 63, *Active Duty Service Commitment (ADSC) Acknowledgement Statement*

DAF Form 679, *Air Force Publication Compliance Item Waiver Request/Approval*

DAF Form 847, *Recommendation for Change of Publication*

DD Form 1415-1, *Reprogramming Action (Prior Approval Action)*

DD Form 250, *Material Inspection and Receiving Report*

DD Form 2888, *Critical Acquisition Position Service Agreement*

DD Form 2889, *Critical Acquisition Position Service Agreement Key Leadership Position (KLP)*

### *Abbreviations and Acronyms*

**A&S**—Acquisition and Sustainment

**ACAT**—Acquisition Category

**ACPINS**—Automated Computer Program Identification Number System

**ADSC**—Active Duty Service Commitment

**AEP**—Allied Engineering Publication

**AETC**—Air Education and Training Command

**AF**—(U.S.) Air Force

**AFFARS**—Air Force Federal Acquisition Regulation Supplement

**AAF**—Adaptive Acquisition Framework

**AFI**—Air Force Instruction

**AFLCMC**—Air Force Life Cycle Management Center

**AFMAN**—Air Force Manual

**AFMC**—Air Force Materiel Command

**AFNWC**—AF Nuclear Weapons Center

**AFOTEC**—Air Force Operational Test & Evaluation Center

**AFPAM**—Air Force Pamphlet

**AFPD**—Air Force Policy Directive

**AFRC**—Air Force Reserve Command

**AFRL**—Air Force Research Laboratory

**AIA**—Aerospace Industries Association

**ALC**—Air Logistics Center

**ANSI/EIA**—American National Standards Institute/Electronic Industries Alliance

**AML**—Acquisition Master List

**APDP**—Acquisition Professional Development Program

**AUPC**—Average Unit Procurement Cost

**CC**—Commander

**CCI**—Controlled Cryptographic Item

**CCaR**—Comprehensive Cost and Requirement System

**CDR**—Critical Design Review

**CFIUS**—Committee on Foreign Investment in the United States

**CI**—Counterintelligence

**CIP**—Critical Intelligence Parameter

**CIO**—Chief Information Officer

**CJCSI**—Chairman of the Joint Chiefs of Staff Instruction

**COMSEC**—Communications Security

**CPIN**—Computer Program Identification Number

**CSAF**—Chief of Staff of the Air Force

**CTE**—Critical Technology Element

**CV**—Vice Commander

**DACM**—Director, Acquisition Career Management

**DAE**—Defense Acquisition Executive

**DAF**—Department of Air Force

**DAFI**—Department of Air Force Instruction

**DAU**—Defense Acquisition University

**DAWIA**—Defense Acquisition Workforce Improvement Act

**DBS**—Defense Business System

**DD**—Department of Defense

**DFARS**—Defense Federal Acquisition Regulation Supplement

**DIAI**—Defense Intelligence Agency Instruction

**DLM**—Defense Logistics Manual

**DMSMS**—Diminishing Manufacturing Sources/Material Shortages

**DoD**—Department of Defense

**DoDD**—Department of Defense Directive

**DoDI**—Department of Defense Instruction

**DOI**—Director of Intelligence

**DOT&E**—Director, Operational Test and Evaluation

**DPA**—Defense Production Act

**DRU**—Direct Reporting Unit

**DT&E**—Developmental Test and Evaluation

**EIA**—Electronic Industries Alliance

**EO**—Executive Order

**EPROM**—Erasable Programmable Read-Only Memory

**ESOH**—Environment, Safety, and Occupational Health

**EUC**—End Use Certificate

**FAR**—Federal Acquisition Regulation

**FI**—Foreign Intelligence

**FLDCOM**—Field Command

**FMECA**—Failure Mode, Effects and Criticality Analysis

**FMR**—Financial Management Regulation

**FMS**—Foreign Military Sales

**FOA**—Field Operating Agency

**FOC**—Full Operational Capability

**FRACAS**—Failure Reporting and Corrective Action System

**FYDP**—Future Years Defense Program

**HAF**—Headquarters Air Force

**HNC**—Cryptologic and Cyber Systems Division

**HQ**—Headquarters

**IA**—Information Assurance

**IC**—Intelligence Community

**IEEE**—Institute of Electrical and Electronics Engineers

**IGF**—Inherently Governmental Function

**IMS**—Integrated Master Schedule

**IML**—Investment Master List

**ISR**—Intelligence, Surveillance, and Reconnaissance

**IT**—Information Technology

**ITIPS**—Information Technology Investment Portfolio Suite

**ITRA**—Independent Technical Risk Assessment

**IUID**—Item Unique Identification

**JCIDS**—Joint Capabilities Integration and Development System

**JEON**—Joint Emergent Operational Need

**JUON**—Joint Urgent Operational Need

**KLP**—Key Leadership Position

**KPP**—Key Performance Parameters

**KSA**—Key System Attributes

**LRU**—Line Replaceable Units

**MAJCOM**—Major Command

**MAR**—Management Acquisition Report (previously Monthly Acquisition Report)

**MD**—Mission Directive

**MCA**—Major Capability Acquisition

**MDA**—Milestone Decision Authority

**MDAP**—Major Defense Acquisition Program

**MIL-HDBK**—Military Handbook

**MIL-STD**—Military Standard

**MRL**—Manufacturing Readiness Level

**MTA**—Middle Tier of Acquisition

**NAS**—National Aerospace Standard

**NC3**—Nuclear Command, Control, and Communications

**NEPA**—National Environmental Policy Act

**NIST**—National Institute of Standards and Technology

**NLW**—Non-Lethal Weapons

**NSS**—National Security Systems

**O&M**—Operations and Maintenance

**OMB**—Office of Management and Budget

**OPR**—Office of Primary Responsibility

**OSD**—Office of the Secretary of Defense

**OT&E**—Operational Test and Evaluation

**OUID**—Organization Unique Identification

**OUSD**—Office of the Under Secretary of Defense

**PAUC**—Program Acquisition Unit Cost

**PCA**—Physical Configuration Audit

**PEM**—Program Element Monitor

**PEO**—Program Executive Officer

**PESHE**—Programmatic Environment, Safety, and Occupational Health Evaluation

**PGI**—Procedures, Guidance, and Information

**PIT**—Platform Information Technology

**PM**—Program Manager

**PMRT**—Project Management Resource Tools

**POC**—Point of Contact

**PPP**—Program Protection Plan

**PRR**—Production Readiness Review

**PSM**—Product Support Manager

**RAMPOD**—Reliability, Availability, Maintainability for Pods

**RC**—recommended change

**RCM**—Reliability Centered Maintenance

**RDT&E**—Research, Development, Test, and Evaluation

**REMIS**—Reliability and Maintainability Information System

**RFP**—Request for Proposals

**RMF**—Risk Management Framework

**ROM**—Read-Only Memory

**SAE**—Service Acquisition Executive

**SAF**—Secretary of the Air Force

**SAP**—Special Access Program

**SCI**—Sensitive Compartmented Information

**SD**—Standardization Document

**SECAF**—Secretary of the Air Force

**SFR**—System Functional Review

**SM**—UNKNOWN

**SPA**—Single Point Adjustment

**SSC**—Space Systems Command

**STD**—System Training Device

**STINFO**—Scientific and Technical Information

**STIP**—DoD Scientific and Technical Information Program

**STTR**—Small Business Technology Transfer

**T&E**—Test and Evaluation

**TCTOs**—Time Compliance Technical Orders

**TO**—Technical Order

**TRL**—Technology Readiness Level

**TSRA**—Training System Requirements Analysis

**TSN**—Trusted Systems and Networks

**UCA**—Urgent Capability Acquisition

**UID**—Unique Identification

**UON**—Urgent Operational Need

**U.S.**—United States

**USAF**—United States Air Force

**USC**—United States Code

**USSF**—United States Space Force

**VE**—Value Engineering

***Office Symbols***

**AF/A2/6**—Deputy Chief of Staff, Intelligence, Surveillance, Reconnaissance and Cyber Effects Operations

**AF/A4**—Deputy Chief of Staff, Logistics, Engineering, & Force Protection

**AF/A5**—Deputy Chief of Staff, Strategy, Integration and Requirements

**AF/A5/7**—Deputy Chief of Staff Requirements Integration and Strategy

**AF/A8**—Deputy Chief of Staff for Plans and Programs

**AF/A8P**—Directorate of Programming

**AF/A10**—Deputy Chief of Staff Strategic Deterrence and Nuclear Integration

**AF/A10P**—Policy and Strategy Division

**AF/JACQ**—Acquisition, Fiscal Law and Litigation Division

**AF/SE**—Air Force Chief of Safety

**AF/TE**—Directorate of Air Force Test and Evaluation

**DD(DT&E)**—Deputy Director for Developmental Test and Evaluation

**OUSD(R&E)**—Office of the Under Secretary of Defense for Research and Engineering

**OSD/DOT&E**—Office of the Secretary of Defense, Director Operational Test and Evaluation

**SAF/AQ**—Assistant Secretary of the Air Force (Acquisition, Technology, and Logistics)

**SAF/AAZ**—Air Force Special Access Central Office

**SAF/AQX**—Deputy Assistant Secretary, Acquisition Integration

**SAF/AQXS**—Acquisition Capability Division

**SAF/CN**—Chief Information Officer (CIO)

**SAF/FM**—Assistant Secretary of the Air Force (Financial Management)

**SAF/FMB**—Deputy Assistant Secretary for Budget

**SAF/FMBI**—Budget Investment Directorate

**SAF/FMC**—Deputy Assistant Secretary for Cost and Economics

**SAF/FML**—Budget and Appropriations Liaison Directorate

**SAF/GC**—General Counsel of the Air Force

**SAF/GCQ**—Acquisition, Technology, and Logistics Division

**SAF/GCR**—Contractor Responsibility and Conflict Resolution Division

**SAF/IAP**—Policy and Programs Directorate

**SAF/IE**—Assistant Secretary of the Air Force (Installations, Environment, and Logistics)

**SAF/LL**—Assistant Secretary of the Air Force (Legislative Affairs)

**SAF/SB**—Office of Small Business Programs

**SAF/SQ**—Assistant Secretary for Space Acquisition and Integration

**SAF/SQA**—Director, Architectures, Science and Technology

**SAF/SQS**—Director of Capability Delivery

**SAF/SQX**—Director of Integration

**SAF/SQXP**—Office of the Assistant Secretary of the Air Force for Space Acquisition & Integration

**USD(A&S)**—Under Secretary of Defense for Acquisition and Sustainment

**USD(I&S)**—Under Secretary of Defense for Intelligence and Security

**USD(R&E)**—Under Secretary of Defense for Research and Engineering

**USSF/SSC**—Space Systems Command

**Note: Refer to DAFPAM 63**—128 and the*Defense Acquisition Guidebook (DAG)*for a list of acquisition terms with definitions

## Attachment 2

## MODIFICATION PROPOSAL PROCESS AND AF FORM 1067 DESCRIPTIONS

**A2.1. Modification Proposal Process Overview.** The AF Form 1067, Modification Proposal Process starts with identification and documentation of a modification requirement and ends when the proposal is certified and approved as described by the *AF/A5R Requirements Development Guidebook*, Vol 2 and this DAFI. See **Figure A2.1,** for the AF Form 1067 process flow of modification proposal process. A modification proposal is the document or combination of documents needed for approval to initiate a modification action. The modification proposal process consists of four steps: 1) request for action and organization validation, 2) lead and using command validation, 3) the PM reviews and approves the technical requirements and solution, and 4) lead command certifies and subsequently the specified approval authority approves.

**A2.2. Step 1, Request for Action and Organization Validation.** In this step, the modification requirements are defined and validated by the organization. Individuals (program offices, operational units, sustainment activities, etc.) initiate a modification proposal by completing Sections 1 through 10 of the AF Form 1067. **(T-1)**

A2.2.1. Temporary modifications requirements included in Section 10 of the AF Form 1067 include: number of units to be modified, total duration of the installed temporary modification, and description of the user's/PM's/lead command's plan for converting the temporary modification into a permanent capability, or their plan for removing the modification from affected articles. **(T-2)**

A2.2.2. Modification proposals developed in response to a UON or JUON include this statement in Section 9 of the AF Form 1067 "This modification is needed to address a Quick Reaction Capability" if the ADM is not attached. **(T-3)**

A2.2.3. Depending on the nature of the need and local procedures, the initiator may recommend a solution in Section 10 of the AF Form 1067.

A2.2.4. After completing Sections 1-10, the initiator submits the AF Form 1067 to the organization-level authority for validation. **(T-2)** The organization-level validation authority completes Section 11 using procedures established by the parent MAJCOM/FLDCOM/FOA/DRU or local instructions. The organization forwards the validated AF Form 1067 to the parent MAJCOM/FLDCOM/FOA/DRU for further review and action. Permanent capability modifications require a KPPs and KSAs Table in accordance with the *AF/A5/7 Capability Development Guidebook, Vol 2*. **(T-2)**

**A2.3. Step 2, Using Command and Lead Command/Core Function Lead Validation.** In this step, the lead and using commands/FOA/DRU state the modification requirement is a valid need that can be met by a materiel solution. **(T-2) Commands** may comment on a proposed solution if one is provided, however validation of the need is not approval for a proposed materiel solution and does not authorize implementation.

A2.3.1. The initiator's parent MAJCOM/FLDCOM/FOA/DRU headquarters makes a validation recommendation of the proposal on AF Form 1067 Section 12 in accordance with established MAJCOM/ FLDCOM/FOA/DRU procedures. The using command forwards the validated AF Form 1067 to the applicable lead MAJCOM/ FLDCOM/FOA/DRU or other DAFPD 10-9 identified organization for further review and action. The lead command/FOA/DRU or DAFPD 10-9 identified organization makes a validation recommendation of the proposal. The lead command coordinates the modification proposal with all affected using commands and supporting organizations, such as training and logistics support units, and installation civil engineering and bioenvironmental engineering units. **(T-2) Lead** commands/organizations forward all proposed safety modifications to the USAF or USSF Chief of Safety for coordination and approval of the safety designation. **(T-1) Once** validated, the lead command prioritizes the modification proposal for funding and implementation. The lead command completes Sections 13 through 22 of the AF Form 1067 and forwards modification proposals designated for funding and implementation to the applicable PM for initial technical evaluation, implementation planning, and cost estimation.

A2.3.2. For modifications involving multiple mission variants within a given asset design-series that are assigned to multiple using commands (e.g., AC/C/EC/MC/HC/WC-130, C/KC/RC/WC-135), each using command validates the modification proposal against assigned assets, and the lead/using command responsible for the largest number of assets within the given design-series will have overall responsibility for validating and approving the modification proposal. If the modification proposal is ultimately approved, each using command determines whether or not to implement the modification on its assigned assets. Each using command attaches supporting documentation to the AF Form 1067 to record their decisions and to provide an audit trail for configuration control purposes.

**A2.4. Step 3, Program Manager Review and Approval of Technical Requirements and Solution.** The PM initiates a technical evaluation unless waived by the PEO. The Chief Engineer, in support of the PM, determines preliminary technical impacts and systems engineering-related requirements to implement the proposed modification (may be waived by the PM). Supporting documentation is attached to the form. Such evaluations will include determination of the impacts to the host weapon system/component's technical baseline, as well as any operating certifications or restrictions associated with the host weapon system/component, such as airworthiness certifications; munitions carriage/employment certifications; ESOH requirements, risks, and certifications; security certifications; cybersecurity; SEEK EAGLE; etc. This evaluation will also determine the potential impacts to, and any corollary modification requirements for, training systems/devices and intelligence or information-related systems and networks that may be required to operate, maintain compatibility with, or sustain the proposed modification.

A2.4.1. The PM also determines the sustainment support needs associated with the proposed modification, including system/product reliability, availability, maintainability, and supportability impacts and requirements (may be waived by the PEO). The PM conducts life cycle risk and ESOH risk assessments for the proposed modification and identifies any necessary risk acceptance documentation, safety certifications, environmental assessments, or statements that must accompany the modification in accordance with DoDI 5000.88, MIL-STD-882E and this instruction. **(T-0)** The modified system(s) PESHE is updated to reflect ESOH risk or hazard data identified. Refer to DAFPAM 63-128, for guidance on life cycle risk management.

A2.4.2. The PM determines if the modification will involve or produce CPI; if CPI is identified, update the PPP, security classification guide and Acquisition Security Database consistent with guidance in DoDI 5000.91_DAFI63-113. The PM ensures this initial technical evaluation encompasses all configuration items and external interfaces whose functional/product baselines may be affected by the proposed modification (may be waived by the PEO). The PM coordinates these initial technical and programmatic requirements with other affected system/product management entities, such as Air Logistics Complex (ALC), training program offices, technology development organizations, etc. (may be waived by the PEO). The PM denotes the modification category (i.e., capability or sustainment modification) in Section 39 of the AF Form 1067 and in applicable modification program plans. As part of the initial technical evaluation of a proposed modification and in coordination with the lead command, the PM develops a preliminary strategy to implement the modification. This strategy will address the management approach to implementing the modification and include, at a minimum, a top- level description of how the modification should be funded, developed, tested, produced, fielded, and supported; and an estimated schedule for implementing the modification (may be waived by the PEO). The PM coordinates with the cognizant contracting officer and small business professional to evaluate any impact to contracts (may be waived by the PEO).

A2.4.3. The PM develops formal cost estimates to implement the proposed modification in accordance with procedures prescribed in AFPD 65-5, as well as the AFI and AFMAN 65-500 series publications and approved USAF and USSF cost estimating techniques. **(T-1)** This estimate includes all costs associated with the development, operation, and sustainment of modification throughout its expected life cycle; include should costs and affordability if required by the pathway. Any cost estimates provided by commercial vendors or other government agencies will be validated by the PM (may be waived by the PEO). For temporary modifications, this estimate should include costs for host system de- modification and disposal (as applicable). Additional cost estimating requirements are prescribed in AFPD 65-5, applicable pathway guidance and 65- series publications, and this instruction.

A2.4.4. The PM attests to the feasibility of the proposed modification requirement by including or appending the following statement in Section 39 of the AF Form 1067 “The capability requirement(s) described in this modification proposal is (are) technically achievable and executable within the estimated schedule and costs identified herein.” **(T-1)**

A2.4.5. The PM completes Sections 23 through 42 of the AF Form 1067 to provide the completed technical evaluation, preliminary implementation strategy and schedule, and cost estimates. The information is forwarded to the lead command and the SAF/AQ Capability Directorate PEM, or SAF/SQ if space, to initiate or ensure appropriate funding actions are taken. The PM also provides the lead command with any other specific recommendations concerning the development, production, installation, testing, and sustainment requirements associated with proposed modification. Depending on the complexity of the modification, the maturity and availability of critical technology elements of the modification, and other external factors such as the availability of funding, the PM may provide the lead command with implementation courses of action that offer alternative or evolutionary approaches to satisfy the operational requirement or stated need.

**A2.5. Step 4, Lead Command Certification and Approval of Modification Proposal.** The lead command reviews the PM's initial technical evaluation, implementation strategy and schedule, and cost estimates, and then either approves the modification or returns it to the PM with recommendation for changes to the proposed mod package. The lead command checks the appropriate blocks in Part V and completes Sections 43 through 45 of the AF Form 1067. The lead command obtains approval for temporary and permanent modifications in both the capability and sustainment categories. Once the modification is fully approved, funded, and designated for implementation, the lead command and PM revise and coordinate a final implementation strategy with affected using commands, support and sustainment organizations, and other stakeholders associated with the modification. Once all management reviews and approvals are completed, the modification proposal will be catalogued and maintained in accordance with applicable records management requirements. Maintain modification proposal documents to record the user's requirement and configuration control throughout the modified asset's life cycle.

A2.5.1. Lead commands coordinate the financing for validated and approved modification proposals with the PM and SAF/AQ or SAF/SQ capability directorate PEM with cognizance over the affected system, subsystem, or item. The lead command, PM, and SAF/AQ or SAF/SQ capability directorate PEM ensures modification requirements are funded as prescribed in AFMAN 65-605, Vol. 1 and as documented in approved RDT&E Program Budget Exhibits (R-1), Procurement Program Budget Exhibits (P-1/P- 3A).

A2.5.2. Modification requirements financed with investment funds described in DAFMAN 65-605 Vol. 1 include but are not limited to development engineering data, modification engineering data, and installation engineering data; procurement and installation of modification kits; support equipment required to sustain the modified configuration; modification of equipment owned by an RDT&E organization used in RDT&E; and embedded information processing equipment and software.

A2.5.3. Modification programs may involve the use of multiple appropriation types in order to implement the modification. Different appropriations may be necessary to fund separate and distinct tasks associated with the modification. For instance, RDT&E funds will often be necessary to design and test the modification, while procurement funds are often required to produce and install the modification. Modification programs will comply with full funding policy detailed in DAFMAN 65-605, Vol. 1 and DoD 7000.14-R, Vol. 2A, Ch. 1. **(T-0)**

A2.5.4. Any modification program or project that has not been previously justified to and approved by Congress during the appropriations process for the fiscal year involved is considered a New Start. When a determination has been made that a modification proposal meets New Start criteria, Congress must be notified via either a letter of notification or a completed Department of Defense Form 1415-1. **(T-0) Modifications** that result from FAA - issued Service Bulletins are also considered New Starts if they are not consistent with the "Service Bulletin" budget line-item materials provided to Congress. Refer to DoD 7000.14-R, Vol. 3, Ch. 6 for specific requirements, processes, and stipulations associated with New Start notifications.

A2.5.5. Individual modifications funded in the Low-Cost Modification line generally satisfy an unforeseen requirement for the entire weapon system inventory/fleet that is estimated to complete within one year. Total funding for Low-Cost Modifications are consistent with DAFMAN 65-605, Vol. 1.

## A2.6. AF Form 1067 Description.

A2.6.1. PART I, REQUEST FOR ACTION. Sections 1-11 are required and will be completed prior to forwarding the modification proposal to using command validation authority **(may be waived by the PEO)**. Sections 1-10 are completed by the initiator and Section 11 is completed by the submitting organization's approval authority. Reference **Table A2.1**for details.

**Table A2.1. Part I, Request for Action.**

| Section | Description | Instructions |
|---|---|---|
| | Page | Enter the appropriate number pages (total) in the submission. |
| | Date | Enter the date of form initiation |
| Section 1 | Initiator Information | Enter the name, grade, office symbol, mailing address and Defense Switching Network (DSN) number of the initiating individual. |
| Section 2 | Initiator's POC Organization Information | Enter the mailing address and DSN of the submitting organization's POC for AF Forms 1067 (normally the unit product improvement manager). |
| Section 3 | Using Command HQ POC Information | Enter the office symbol, mailing address, and DSN of the initiators using command/agency headquarters (HQ) POC for processing AF Forms 1067. |
| Section 4 | Title | Enter the title that best defines/describes the addressed need/requirement |
| Section 5 | Organization Control Number | Enter the control number assigned by the submitting organization's POC. If none, leave blank |
| Section 6 | Other Numbers | Use this block to enter any other identifying number. If none, leave blank. (**Note**: TCTO, material improvement program (MIP), engineering change proposal (ECP) and modification (Mod) numbers are entered in Section 24.) |
| Section 7 | Affected Configured Item/Systems | A. Enter the Mission Design Series, Type Mission Series, or the Configured End Item Identification for other weapon systems (e.g., AN/APN-59, or CPIN).<br>1. If all series of the system are affected, cite only the Mission and Design: (e.g., F-15)<br>2. If all Mission Design Series' will not fit, show the one with the highest logistic support priority (LSP) in this block and list all other Mission Design Series on an attached continuation page.<br>3. If the modification affects multi-systems, enter the system that has the highest LSP and list all other weapon systems or end items affected by the modification on an attached continuation page. |

| | | |
|---|---|---|
| | | B. Enter work unit code of affected Configuration Item |
| | | C. Enter National Stock Number of affected Configuration Item. |
| | | D. Enter standard reporting designator code, as applicable |
| | | E. Enter nomenclature of affected Configuration Item. |
| | | F. Use other to specify any additional identifier as needed. |
| Section 8 | Purpose: | State the deficiency to be corrected or the need to be satisfied by the proposal and what the expected result will/should be. If known by field level initiators or if form is initiated by SM personnel, include: |
| | | A. Current and projected mean time before maintenance actions (MTBMA)-mission essentiality identification code (MEIC) for all affected line replaceable units (LRU) (For engines: MEIC for all recoverable items affected by modification at highest indenture level below engine.) (MEIC is applicable to all but structural modifications.) |
| | | B. Number of mission capable hours, both current and projected, if applicable. |
| | | C. Current unscheduled removal rate of equipment, and projected removal rate after modification, if applicable. |
| | | D. Current or projected mission aborts (before flight aborts, in flight aborts, or total aborts - per assigned Mission Design Series sortie generation requirements). |
| | | E. If unmodified system LRUs are resulting in excessive maintenance hours or extravagant spares requirements, show estimated number of maintenance hours being expended (with dollar value of those hours shown in parenthesis) or dollar value of excess spares requirement, to include one year’s demand history to reflect increased spares consumption. |
| Section 9 | Impact | State the impact of not correcting the deficiency or satisfying the need specified in Section 8. |
| Section 10 | Constraints/Assumptions/Proposed Solutions | State proposed solutions, constraints or assumptions and recommend modification type (Permanent, Safety, T-1, or T-2). Attach technical/engineering data package documentation including but not limited to sketches, drawings, diagrams, etc. If being completed by SM personnel, the following information should be included. For temporary modifications, identify the total number of units to be modified and the duration/date the units will be returned to their original configuration. (You are not limited to just this information.) |

| | | |
|---|---|---|
| | | A. Development Status - If an ECP has been received, give date received or if an operational change proposal (OCP) is being developed, give status. If product reliability and maintainability related engineering has been accomplished, explain here. If no ECP/OCP required, state why. State whether flight test is required and, if required, anticipated length of time required. |
| | | B. Contracting Requirements - State whether modification will be contractually procured or organically assembled or a combination of the two. If contract will be sole source, give contractor's name. |
| | | C. Risk Factor - Identify areas of risk associated with the proposed requirement with emphasis on highest risk. |
| Section 11 | Organization Validation | After the individual designated/authorized to validate the proposal performs a quality review of the AF Form 1067 to ensure all initiator required blocks are complete, the validation authority will check the appropriate block (A through C), and completes blocks D through F |
| | Date Received: | Enter the date the proposal is received by the organization for validation request approved, forward for using command validation. |
| | | A. Proposed request disapproved, forward to initiator POC. |
| | | B. Proposal returned to initiator POC for additional information |
| | | C. Enter the date signed. |
| | | D. Type or print name, grade, title, DSN of validating official or designated representative. |
| | | E. Signature of organization validating official or designated representative. |

A2.6.2. PART II, USING COMMAND VALIDATION: Section 12 is to be completed by using command/Air National Guard or equivalent agency headquarters personnel. If the using command/agency is the lead command, proceed to Part III, Section 13. See **Table A2.2** for detailed instructions.

**Table A2.2. Part II, Using Command Validation.**

| **Section** | **Description** | **Instructions** |
|---|---|---|
| Section 12 | Using Command Validation | The individual designated/authorized to validate the proposal for further processing will check the appropriate block (A through C) and complete blocks D through H. |
| | Date Received: | Enter the date the proposal is received from the initiating organization. |
| | | A. Proposed request approved, forward for using command/agency validation. |
| | | B. Proposed request disapproved. If disapproved, rational for this decision must be returned to the originating organization |
| | | C. Proposal returned to initiator POC for additional information |
| | | D. If the using command/agency is not the lead command for the affected weapon system/Configuration Item, check this block and forward to the appropriate lead command. See DAFPD 10-9 for listing of assigned weapon system lead commands. |
| | | E. Enter using command/agency tracking number. |
| | | F. Enter the date signed. |
| | | G. Type or print name, grade, title, DSN of using command/agency designated validation authority. |
| | | H. Signature of using command/agency designated validation authority. |

A2.6.3. PART III – LEAD COMMANDVALIDATION: Sections 13 – 22 are required fields and completed by lead command Headquarters' personnel as detailed in **Table A2.3**.

**Table A2.3. Part III, Lead Command Validation.**

| Section | Description | Instructions |
|---|---|---|
| | Date Received: | Enter the date the proposal was received from the using command/agency |
| Section 13 | Lead Command Action Officer | Enter the name, grade, office symbol, mailing address, and DSN of the evaluating action officer. |
| Section 14 | Through (Optional Routing): | Enter the mailing address for other using commands/agencies as applicable. |
| Section 15 | Single Manager Office | Enter the office symbol, mailing address, and DSN of the Single Manager POC for processing AF Forms 1067. |
| Section 16 | Modification Type: | Mark one of the appropriate blocks to identify the proposed type of modification as defined in this DAFI. |
| Section 17 | Lead Command Control Number | Enter the tracking control number. |
| Section 18 | Lead Command Remarks | Enter any known constraints or assumptions that must be addressed during the next level(s) of evaluation. For temporary modifications, address validation of the requirement in terms of the total number of units to be modified and the duration/date the units will be returned to their original configuration. |
| Section 19 | Lead Command Validation Authority | The individual designated/authorized to validate the proposal will check the appropriate block. |
| | | A. Validated Request: Proposal is a valid need /requirement. |
| | | B. Disapproved Request: Proposal is not a valid need/requirement. If disapproved, rational for this decision must be returned to the using command/agency or originating organization. |
| Section 20 | Validation Authority | Type or print name, grade, title, DSN of lead command designated validation authority |
| Section 21 | Signature of Lead Command | Signature of designated validation authority. |
| Section 22 | Date | Enter the date signed. |

A2.6.4. PART IV, SINGLE MANAGER REVIEW AND APPROVAL. Sections 23 - 42 are required fields and completed by the PM as detailed in **Table A2.4**.

**Table A2.4. Part IV, Single Manager Review and Approval.**

| Section | Description | Instructions |
|---|---|---|
| | DATE RECEIVED: | Enter the date the proposal was received from the lead command. |
| Section 23 | SM Action Officer Info | Enter the name, grade, office symbol, mailing address and DSN of the SM evaluating action officer. |
| Section 24 | Center Control Numbers | Enter assigned numbers, if applicable. If none assigned, leave blank. Enter any other applicable identifier(s) as a continuation of this block on an attached continuation page.<br>A. Center MIP No:<br>B. ECP No:<br>C. TCTO No: |
| Section 25 | Total BP/EEIC | Enter the total estimated cost by appropriation budget codes. (Example: $3.5M BP1100, $4.5M BP2100, $1.0M 3400, $.5M 0350, EEIC 583, etc.)<br>Also Affects: Check the appropriate block for each affected item (for permanent modifications only). Identify each affected supporting system on a continuation sheet (for example, when training aids are affected, provide trainer flight equipment number, maintenance trainer identifying number, and part number as applicable.). If "OTHER" is checked, identify any significant impacts not otherwise covered here and explain on a continuation sheet. When system-training devices (STDs) are affected, provide on a continuation sheet, the information needed as it relates to the modification of the applicable STDs. |
| Section 26 | Nr of CIS Affected | Enter the total number of configured items to be modified (i.e., black boxes, aircraft, etc.). |
| Section 27 | Total Kits Needed | Enter the total number of kits or applicable units proposed, including spares. |
| Section 28 | Also Affects | Check the appropriate block for each affected item (for permanent modifications only). Identify each affected supporting system on a continuation sheet (for example, when training aids are affected, provide trainer flight equipment number, maintenance trainer identifying number, and part number as applicable.). If "OTHER" is checked, identify any significant impacts not otherwise covered here and explain on a continuation sheet. When STDs are affected, provide on a continuation sheet, the |

| | | |
|---|---|---|
| | | information needed as it relates to the modification of the applicable STDs.<br>Support Equipment:<br>Aircrew Training:<br>Training Devices/Visual Aids (Maint): Tech Data:<br>Spares:<br>Software:<br>Other:<br>If STDs are not affected, include on continuation page the appropriate certification (indicate why modification to STDs is not desired or needed) and include certifying official's name, grade, and office symbol. **Note**: STD is an all-encompassing term. It refers to mission simulators, flight simulators, aircrew or missile crew or cockpit procedures trainers, as well as maintenance training devices, visual aids, simulation devices, operational support equipment, spares, and video tapes, etc.; included in mobile maintenance training sets used to support the field training detachments, and resident training equipment that must be maintained to reflect related weapon systems or equipment configuration. Complete staffing and coordination are required to determine if the supporting systems are affected. |
| Section 29 | Kit or Unit cost: | Enter the cost for a single kit (group A/B only). |
| Section 30 | Total Cost | Enter the total estimated cost of the proposed solution as outlined in the BCI.<br>Enter the estimated engineering and kit acquisition lead-time. Compute lead-time by totaling initial admin and initial production estimates: (Entries to be in months) |
| Section 31 | Lead Time | Enter the estimated engineering and kit acquisition lead-time. Compute lead-time by totaling initial admin and initial production estimates: (Entries to be in months) |
| | | A. Initial Admin: The number of months from initiation of the requirement to production contract award date or obligation acceptance by the appropriate directorate. "Admin" in this case includes time for engineering and other acquisition processes. |
| | | B. Initial Production: The number of months from contract award date or document obligation/ acceptance date through the date of completion of the TCTO verification process |

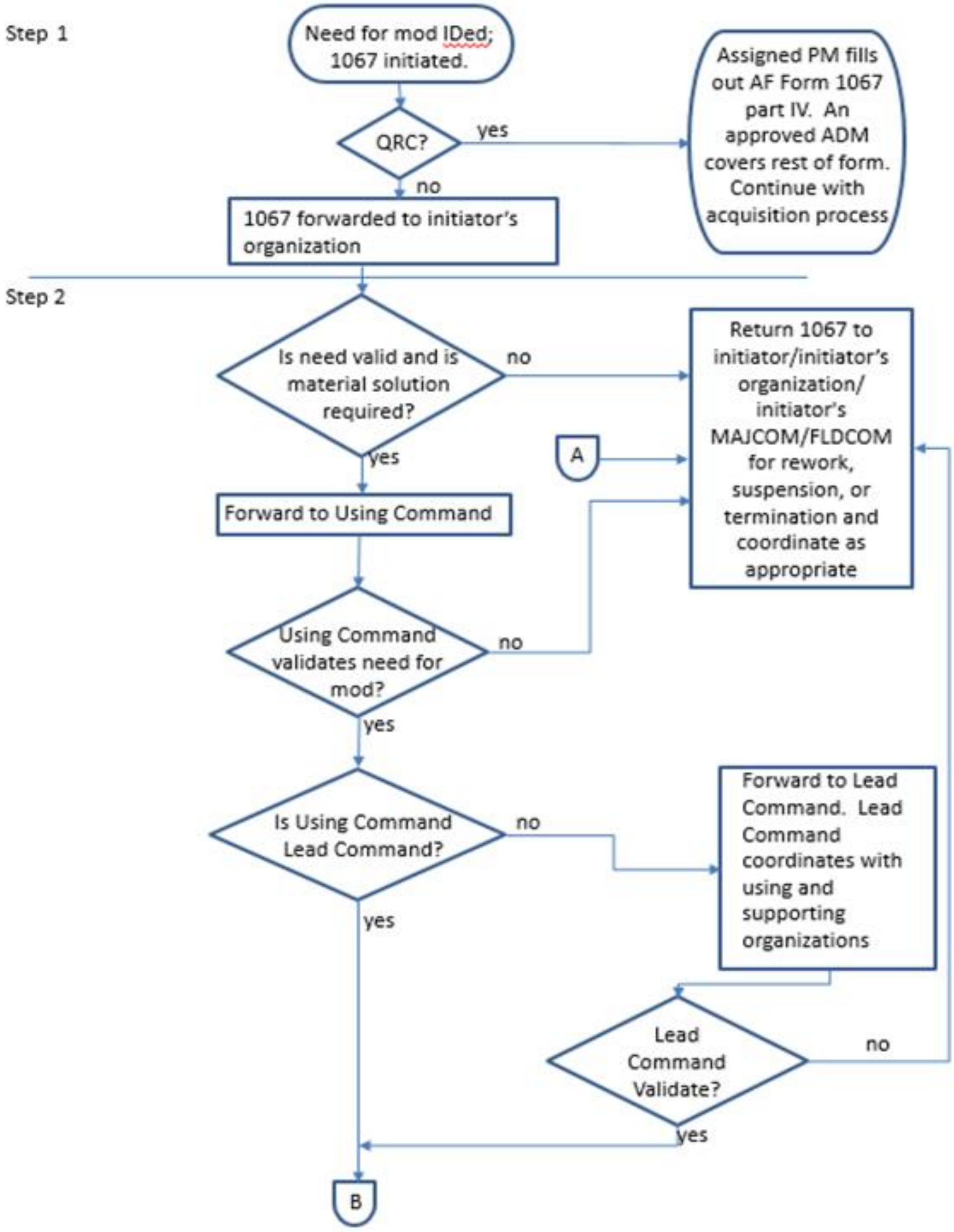
| | | |
|---|---|---|
| Section 32 | Installation: Begin and complete | Enter the dates, by FY and quarter (YYYY/QTR), for projected initiation of production installs and completion of final installations. |
| Section 33 | Level of Accomplishment | Check the appropriate block indicating the recommended level of accomplishment (i.e., user (organizational), depot (organic or contract) or both (both is to be used if the commodity will be modified at depot level and installed into the aircraft or major end item by the user or organizational level)). If the level of accomplishment is “OTHER” identify specifics in Section 39 or on attached continuation sheet |
| Section 34 | User Work Hrs | Enter the number of estimated user man-hours needed to perform the modification on one Configuration Item. |
| Section 35 | Depot Work Hrs | Enter the number of estimated depot man-hours needed to perform the modification on one Configuration Item. |
| Section 36 | Total Work Hrs | Enter the number of estimated man-hours needed to accomplish the modification on all Configuration Items. |
| Section 37 | Manufacturer | Enter the name of the manufacturer. This normally applies when an ECP is involved, since the ECP is prepared by the manufacturer. If unknown, leave blank. |
| Section 39 | Engineering Review Recommend-action(s) | Provide adequate justification appropriate with engineering evaluation decision. For proposals which have approved engineering solutions, the SM will provide enough detail for the lead command to make an assessment of the proposed solution for lead command certification. The SM or designated representative will check the appropriate block indicating approval or disapproval of the SM review. If disapproved, the SM provides the lead command with rational for this decision. Include the modification type (i.e., capability or sustainment) **Note**: SM approval does not constitute authorization to install the modification until funded and lead command approval to proceed (Sections 44 through 48). |
| Section 40 | Single Manager | Type or print the name, grade, and title, DSN of the SM or designated representative. |
| Section 41 | Signature | Signature of the PM or designated representative. |
| Section 42 | Date | Enter the date signed. |

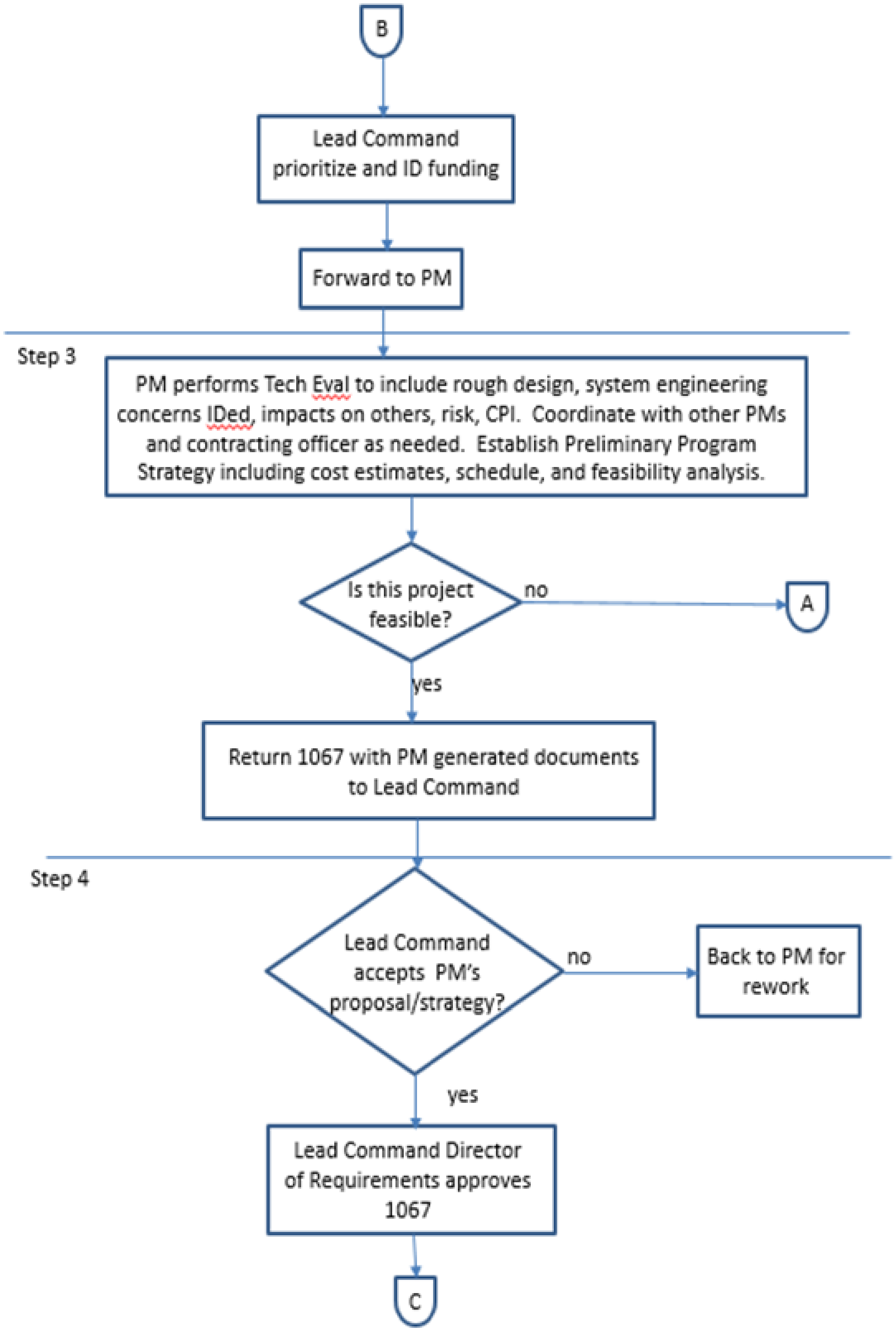
A2.6.5. PART V, LEAD COMMAND CERTIFICATION ANDAPPROVAL. Sections 43 through 47 are required and completed by the lead command that is assigned the responsibility for the applicable affected configured item(s) as detailed in **Table A2.5**. The lead command designated certification/approval authority will check the appropriate block indicating Modification Approval or Disapproval. **Note**: Do not use the block MNS/ORD to be developed. If approved, using command/agency (if applicable) or the originating organization coordinates with the PM for specific installation documentation and required certifications that accompany the modification. If disapproved, the lead command provides the using command/agency (if applicable) and the originating organization with the rational for this decision. Forward applicable Modification Proposals to AF/A5/7 as specified in applicable 10-series AFIs or the AF/A5/7 *Capability Development Guidebook, Vol 1-5*.

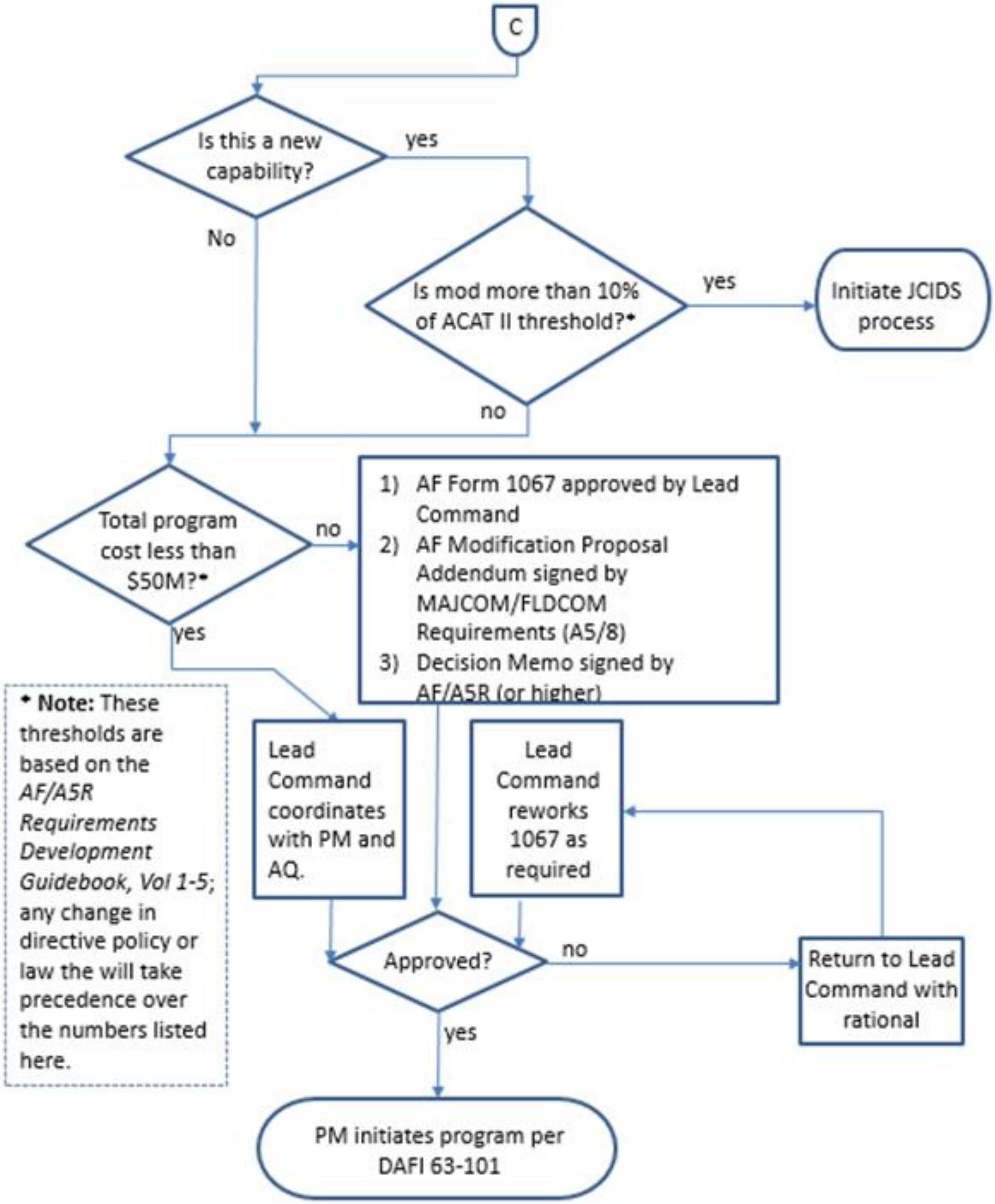
**Table A2.5. Part V, Lead Command Certification and Approval.**

| **Section** | **Description** | **Instructions** |
|---|---|---|
| Section 43 | Lead Command Authority | Type or print name, grade, and title, DSN of the lead command designated certification/approval authority. |
| Section 44 | Signature | Signature of the lead command designated certification/approval authority. |
| Section 45 | Date | Enter the date signed |

**Figure A2.1. AF Form 1067 Process Flow.**


Step 1
Need for mod IDed; 1067 initiated.
QRC?
yes
Assigned PM fills out AF Form 1067 part IV. An approved ADM covers rest of form. Continue with acquisition process
no
1067 forwarded to initiator's organization
Step 2
Is need valid and is material solution required?
no
Return 1067 to initiator/initiator's organization/ initiator's MAJCOM/FLDCOM for rework, suspension, or termination and coordinate as appropriate
A
yes
Forward to Using Command
Using Command validates need for mod?
no
yes
Is Using Command Lead Command?
no
Forward to Lead Command. Lead Command coordinates with using and supporting organizations
yes
Lead Command Validate?
no
yes
B

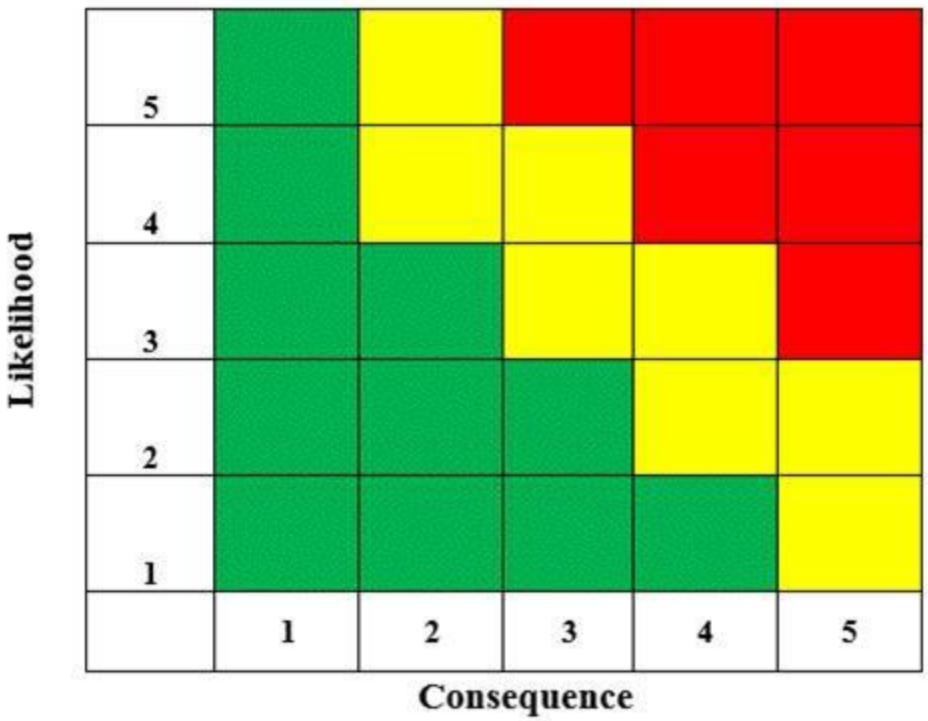

B
Lead Command prioritize and ID funding
Forward to PM
Step 3
PM performs Tech Eval to include rough design, system engineering concerns IDed, impacts on others, risk, CPI. Coordinate with other PMs and contracting officer as needed. Establish Preliminary Program Strategy including cost estimates, schedule, and feasibility analysis.
Is this project feasible?
no
A
yes
Return 1067 with PM generated documents to Lead Command
Step 4
Lead Command accepts PM's proposal/strategy?
no
Back to PM for rework
yes
Lead Command Director of Requirements approves 1067
C


C
Is this a new capability?
yes
No
Is mod more than 10% of ACAT II threshold?•
yes
Initiate JCIDS process
no
Total program cost less than $50M?•
no
1) AF Form 1067 approved by Lead Command
2) AF Modification Proposal Addendum signed by MAJCOM/FLDCOM Requirements (A5/8)
3) Decision Memo signed by AF/A5R (or higher)
yes
• Note: These thresholds are based on the AF/A5R Requirements Development Guidebook, Vol 1-5; any change in directive policy or law the will take precedence over the numbers listed here.
Lead Command coordinates with PM and AQ.
Lead Command reworks 1067 as required
Approved?
no
Return to Lead Command with rational
yes
PM initiates program per DAFI 63-101

## Attachment 3

## LIFE CYCLE RISK MANAGEMENT RISK MATRIX DEFINITIONS

**Figure A3.1. Life Cycle Risk Management Risk Matrix.**



| | | | | | |
|---|---|---|---|---|---|
| 5 | 🟩 | 🟨 | 🟥 | 🟥 | 🟥 |
| 4 | 🟩 | 🟨 | 🟨 | 🟥 | 🟥 |
| 3 | 🟩 | 🟩 | 🟨 | 🟨 | 🟥 |
| 2 | 🟩 | 🟩 | 🟩 | 🟨 | 🟨 |
| 1 | 🟩 | 🟩 | 🟩 | 🟩 | 🟨 |
| | 1 | 2 | 3 | 4 | 5 |

**Table A3.1. Likelihood Criteria.**

| Level | Likelihood | Percent Probability of Occurrence |
|---|---|---|
| 5 | Near Certainty | 81-99 |
| 4 | Highly Likely | 61-80 |
| 3 | Likely | 41-60 |
| 2 | Low Likelihood | 21-40 |
| 1 | Not Likely | 5-20 |

**Table A3.2. Standard Consequence Criteria – Performance.**

| Level | Standard Consequence Criteria - Performance |
|---|---|
| 1 | Minimal consequence to technical performance or supportability but no overall impact to the program success. A successful outcome is not dependent on this issue; the technical performance goals or technical design margins will still be met. |
| 2 | Minor reduction in technical performance or supportability, can be tolerated with little impact on program success. Technical performance will be below the goal or technical design margins will be reduced, but within acceptable limits. |
| 3 | Moderate shortfall in technical performance or supportability with limited impact on program success. Technical performance will be below the goal but approaching unacceptable limits; or technical design margins are significantly reduced and jeopardize achieving the system performance threshold values. |
| 4 | Significant degradation in technical performance or major shortfall in supportability with a moderate impact on program success. Technical performance is unacceptably below the goal; or no technical design margins available and system performance will be below threshold values. |
| 5 | Severe degradation in technical performance or supportability; will jeopardize program success; or will cause one of the triggers listed below (**Note 1**) |

**Note 1**: Apply to equivalent decision point or term if not MCA**.** Any root cause that, when evaluated by the cross-functional team, has a likelihood of generating one of the following consequences is rated at Consequence Level 5 in Performance:

- Will not meet KPP Threshold
- Critical Technology Element (CTE) will not be at TRL4 at Milestone A
- CTE will not be at TRL6 at Milestone B
- CTE will not be at TRL 7 at Milestone C
- CTE will not be at TRL 8 at the Full-rate Production Decision point.
- MRL* will not be at 8 by Milestone C
- MRL* will not be at 9 by Full-rate Production Decision point.
- System availability threshold will not be met.

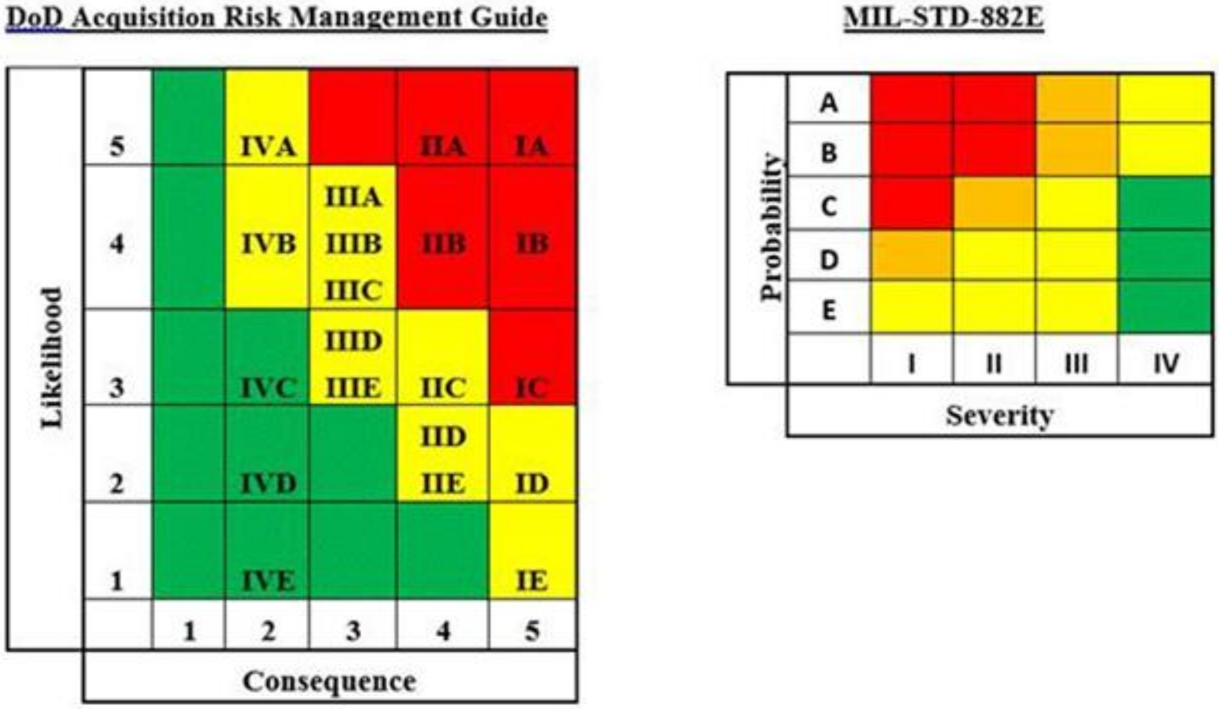
**Table A3.3. Standard Consequence Criteria – Schedule.**

| **Level** | **Standard Consequence Criteria - Schedule** |
|---|---|
| 1 | Negligible program or project schedule slip |
| 2 | Schedule slip, but:<br>Able to meet milestone dates (e.g., A, B, and C) and other key dates (e.g., CDR, FRP, FOC) Does not significantly decrease program total float and<br>Does not impact the critical path to program or project completion date |
| 3 | Schedule slip that requires closely monitoring the schedule due to the following: Impacting the ability, but still able to meet milestone dates (e.g., A, B, and C) or other key dates (e.g., CDR, FRP, FOC)<br>Significantly decreasing program total float<br>Impacting the critical path to program or project completion date |
| 4 | Schedule slip that requires schedule changes due to the following:*<br>Significantly impacting the ability to meet MS dates (e.g., A, B, and C) or other key dates (e.g., CDR, FRP, FOC)<br>Significantly impacting the ability to meet the program or project completion date |
| 5 | Schedule slip that requires a major schedule re-baselining due to the following:* Failing to meet milestone dates (e.g., A, B, and C) or other key dates (e.g., CDR, FRP, FOC)<br>Failing to meet the program or project completion date |
| * Exhibit awareness to exceeding 10 USC Section 4371-4375 (Nunn-McCurdy threshold breach for schedule).<br>**Note**: Impact varies based on 1) The schedule slips relative to the remaining duration in the program or major milestones; amount of remaining time to work-around the impact; 2) The impact of the slip with respect to key resources. | |

**Table A3.4. Standard Consequence Criteria – Cost.**

| **Level** | **andard Consequence Criteria – Cost (A-B Refers to milestone designation)** |
|---|---|
| 1 | For A-B Programs: <1% increase from milestone A or last approved Development or Production cost estimate.<br>For Post-B and Other Programs: <1% increase from milestone A or last approved Development or Production cost estimate. |
| 2 | For A-B Programs: 1% to <3% increase from milestone A or last approved Development or Production cost estimate.<br>For Post-B and Other Programs: 1% to <3% increase from milestone A or last approved Development or Production cost estimate. |
| 3 | For A-B Programs: 3% to <5% increase from milestone A or last approved Development or Production cost estimate.<br>For Post-B and Other Programs: 3% to <5% increase in Development or >1.5% increase to Program Acquisition Unit Cost (PAUC) or Average Procurement Unit Cost (APUC) from last approved baseline estimate or >3% increase to PAUC or APUC from original baseline. (1/10 of 10 USC Section 4371-4375 (Nunn-McCurdy) "significant" breach). |
| 4 | For A-B Programs: 5% to <10% increase from milestone A or last approved Development or Production cost estimate.<br>For Post-B and Other Programs: 5% to <10% increase in Development or >3% increase to PAUC or APUC from last approved baseline estimate or >6% increase to PAUC or APUC from original baseline. (1/5 of 10 USC Section 4371-4375 (Nunn-McCurdy) significant breach). |
| 5 | For A-B Programs: >10% increase from milestone A or last approved Development or Production cost estimate.<br>For Post-B and Other Programs: >10% increase in Development or >5% increase to PAUC or APUC from last approved baseline estimate or >10% increase to PAUC or APUC from original baseline. (1/3 of 10 USC Section 4371-4375 (Nunn-McCurdy) significant breach). |

**Figure A3.2. Translation of MIL-STD-882E Risk Matrix to the OSD Risk Management Guide Matrix.**



DoD Acquisition Risk Management Guide

| Likelihood | | | | | |
|---|---|---|---|---|---|
| 5 | 🟩 | 🟨 IVA | 🟥 | 🟥 IIA | 🟥 IA |
| 4 | 🟩 | 🟨 IVB | 🟨 IIIA<br>IIIB<br>IIIC | 🟥 IIB | 🟥 IB |
| 3 | 🟩 | 🟩 IVC | 🟨 IIID<br>IIIE | 🟨 IIC | 🟥 IC |
| 2 | 🟩 | 🟩 IVD | 🟩 | 🟨 IID<br>IIE | 🟨 ID |
| 1 | 🟩 | 🟩 IVE | 🟩 | 🟩 | 🟨 IE |
| | 1 | 2 | 3 | 4 | 5 |
| | Consequence | | | | |

MIL-STD-882E

| Probability | | | | |
|---|---|---|---|---|
| A | 🟥 | 🟥 | 🟧 | 🟨 |
| B | 🟥 | 🟥 | 🟧 | 🟨 |
| C | 🟥 | 🟧 | 🟨 | 🟩 |
| D | 🟧 | 🟨 | 🟨 | 🟩 |
| E | 🟨 | 🟨 | 🟨 | 🟩 |
| | I | II | III | IV |
| | Severity | | | |

**Note**: MIL-STD-882E includes probability level "F" for "eliminated" ESOH risks that are "incapable of occurrence." ESOH risks with probability level F should not be translated to the DoD Acquisition Risk Management program risk matrix.

## Attachment 4

## DETERMINATION FOR NATIONAL SECURITY SYSTEMS (NSS)

**A4.1. Overview Designation.** Protection of critical information continues to be a challenge for DoD. Even with the increased emphasis to protect DAF information that resides in information and communication technology systems and equipment, loss of defense information continues at an unacceptable rate, resulting in a call for review of all information systems and the cybersecurity protection these systems need to ensure cyber hygiene and resiliency of their system. In accordance with HAFMD 1-26, the component CIO ensures NSS interoperability and NSS federal reporting.

**A4.2. NSS Designation Review.** In accordance with AFI 17-110, *Information Technology Portfolio Management and Capital Planning and Investment Control*, NSS designations are reviewed at least annually for continuation, modification, or termination recommendations. **(T-1)**

**A4.3. NSS Determination Process.** Per DoD guidance to leverage National Institute of Standards and Technology (NIST) processes whenever possible, the DAF NSS determination process aligns to NIST Special Publication 800-59, *Guideline for Identifying an Information System as a National Security System*.

A4.3.1. NSS Designation has potential impacts on numerous system requirements and activities. Some of these include – but are not limited to – application of the RMF, CJCSIs, CNSSIs, and requirements specified in JCIDS, Initial Capability Document, Capability Development Document, Capability Production Document, and System Survivability KPPs.

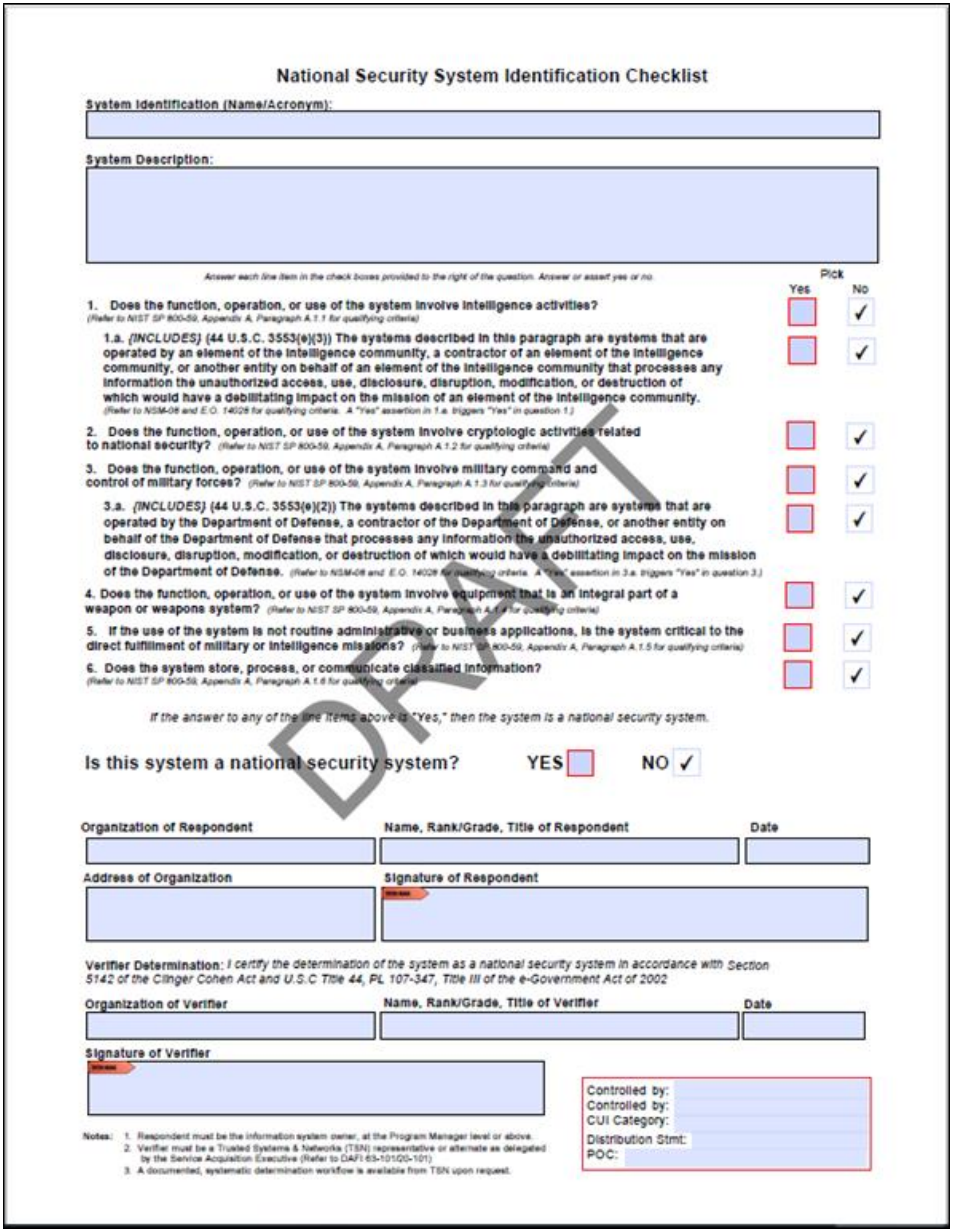
A4.3.2. Application of the NSS determination involves multiple stakeholders, beginning with the Program Management Office (PMO) and including DAF TSN, the SAE, and the DAF CIO. In cases of dispute, status change, or sunset, the dispute may involve stakeholders from DoD CIO or the Federal level up to the NSS National Manager. NSS determination will be added as a new program protection item for inclusion in DAFPAM 63-128. In the interim, a documented, systematic, comprehensive NSS determination workflow is available upon request from the TSN Center of Excellence (CoE).

A4.3.3. Application of the NSS determination process generates the NSS Identification Checklist at **Figure 4.1., Checklist for National Security Systems Determination**. Required participants in the determination process include signatories on the NSS designation memorandum, the Information Owner, the lead systems engineer, and the verifier (Implementing Command TSN Focal Point, or designee). Additional participants may include the Information System Owner, the Information System Security Manager (ISSM), or others as identified. Required participants at system sunset (which does not involve a determination decision) are the PM and the Information Owner. The PM is the required primary signatory on the designation memorandum that will be submitted with the NSS determination. During initial determination and cases without dispute, a Command TSN Focal Point or designee is the verifier and second signatory. The second signatory is delegated by the SAE and represents TSN equities. **Note**: Information submitted in the Checklist for National Security Determination should be protected at the level of the submitted information, to include as controlled unclassified information. Reference DoDI 5200.08.

A4.3.4. Drivers for a NSS determination requirement may include making the initial system determination, a mission change for the system, and removal or inclusion of classified data handling. Initial determinations and annual reviews resulting in a status change are submitted to SAF/AQ, and SAF/SQ for space systems, for tracking in PMRT.

**A4.4. Checklist for NSS Determination.** Program managers should complete and submit a NSS determination checklist outlined in **Figure A4.1**. This NSS determination checklist will be completed and submitted to SAF/AQ and SAF/SQ for space systems, for tracking. SAF/AQ, or SAF/SQ for space systems, will then record the determination checklist recommendation for tracking in PMRT. The PM will then provide the NSS determination checklist to SAF/CN who will review and validate NSS determination is documented in the system of record.

**Figure A4.1.  Checklist for National Security System Determination.**



### National Security System Identification Checklist

**System Identification (Name/Acronym):**

**System Description:**

*Answer each line item in the check boxes provided to the right of the question. Answer or assert yes or no.*

| | Pick | |
|---|---|---|
| | Yes | No |
| **1. Does the function, operation, or use of the system involve intelligence activities?** *(Refer to NIST SP 800-59, Appendix A, Paragraph A.1.1 for qualifying criteria)* | ☐ | ☑ |
| **1.a.** *{INCLUDES}* **(44 U.S.C. 3553(e)(3)) The systems described in this paragraph are systems that are operated by an element of the intelligence community, a contractor of an element of the intelligence community, or another entity on behalf of an element of the intelligence community that processes any information the unauthorized access, use, disclosure, disruption, modification, or destruction of which would have a debilitating impact on the mission of an element of the intelligence community.** *(Refer to NSM-08 and E.O. 14028 for qualifying criteria.  A "Yes" assertion in 1.a. triggers "Yes" in question 1.)* | ☐ | ☑ |
| **2. Does the function, operation, or use of the system involve cryptologic activities related to national security?** *(Refer to NIST SP 800-59, Appendix A, Paragraph A.1.2 for qualifying criteria)* | ☐ | ☑ |
| **3. Does the function, operation, or use of the system involve military command and control of military forces?** *(Refer to NIST SP 800-59, Appendix A, Paragraph A.1.3 for qualifying criteria)* | ☐ | ☑ |
| **3.a.** *{INCLUDES}* **(44 U.S.C. 3553(e)(2)) The systems described in this paragraph are systems that are operated by the Department of Defense, a contractor of the Department of Defense, or another entity on behalf of the Department of Defense that processes any information the unauthorized access, use, disclosure, disruption, modification, or destruction of which would have a debilitating impact on the mission of the Department of Defense.** *(Refer to NSM-08 and E.O. 14028 for qualifying criteria.  A "Yes" assertion in 3.a. triggers "Yes" in question 3.)* | ☐ | ☑ |
| **4. Does the function, operation, or use of the system involve equipment that is an integral part of a weapon or weapons system?** *(Refer to NIST SP 800-59, Appendix A, Paragraph A.1.4 for qualifying criteria)* | ☐ | ☑ |
| **5. If the use of the system is not routine administrative or business applications, is the system critical to the direct fulfillment of military or intelligence missions?** *(Refer to NIST SP 800-59, Appendix A, Paragraph A.1.5 for qualifying criteria)* | ☐ | ☑ |
| **6. Does the system store, process, or communicate classified information?** *(Refer to NIST SP 800-59, Appendix A, Paragraph A.1.6 for qualifying criteria)* | ☐ | ☑ |

*If the answer to any of the line items above is "Yes," then the system is a national security system.*

DRAFT

Is this system a national security system? YES ☐ NO ☑

| | | |
|---|---|---|
| **Organization of Respondent** | **Name, Rank/Grade, Title of Respondent** | **Date** |
| **Address of Organization** | **Signature of Respondent** | |

**Verifier Determination:** *I certify the determination of the system as a national security system in accordance with Section 5142 of the Clinger Cohen Act and U.S.C Title 44, PL 107-347, Title III of the e-Government Act of 2002*

| | | |
|---|---|---|
| **Organization of Verifier** | **Name, Rank/Grade, Title of Verifier** | **Date** |

**Signature of Verifier**

Controlled by:
Controlled by:
CUI Category:
Distribution Stmt:
POC:

**Notes:**
1. Respondent must be the information system owner, at the Program Manager level or above.
2. Verifier must be a Trusted Systems & Networks (TSN) representative or alternate as delegated by the Service Acquisition Executive (Refer to DAFI 63-101/20-101)
3. A documented, systematic determination workflow is available from TSN upon request.