Air Force Product Support Enterprise Vision

July 2013

Foreword

Product Support is a set of functions and products that enables operational capability and readiness of systems, subsystems, and components. Within the Air Force, product support is provided by a complex array of public and private organizations. These organizations execute a myriad of product support activities to deliver the required performance of our weapons systems.

In our fiscally constrained environment, affordable and effective product support is critically important. Controlling system operations and support costs, which typically account for 60 to 70 percent of a system's total life cycle cost, is essential to ensuring we provide the same high level of operational readiness despite fiscal constraints. To control costs and deliver required system support, program managers (PM) must pursue two primary objectives. First, the system must be designed to be supportable and *reduce the level of required product support,* and second, any product support required for the system *must be effective and efficient*. We have had mixed results in achieving these two objectives and our current operating environment dictates that we must do a better job planning and executing product support strategies for our current and future systems.

This document provides Air Force Materiel Command (AFMC), Air Force Space Command (AFSPC), Program Executive Officers, PMs, Product Support Managers (PSM), Product Support Providers (PSP), and headquarters-level decision makers with a vision for product support within the Air Force. It contains guiding tenets to help shape our decision making processes, as well as desired state objectives that describe a future state for Air Force product support capabilities. This vision is only a foundation; AFMC and AFSPC must ensure our product support enterprise is organized, trained, and equipped to achieve enterprise desired state objectives and to affordably and effectively satisfy the demands and challenges posed by our systems and their operating environments, now and over the next decade.
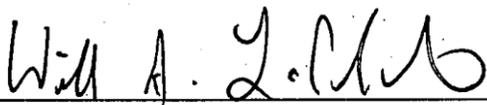
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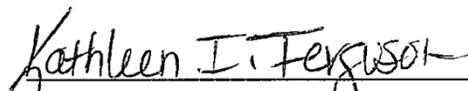
Acting Assistant Secretary
Installations, Environment & Logistics
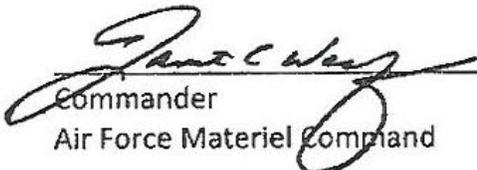
Commander
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Air Force Space Command

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Logistics, Installations & Mission Support

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Introduction

The Air Force must continue to modernize and sustain affordable and effective systems in a challenging fiscal environment. For most Air Force systems, the majority of the total life cycle cost is expended in executing product support functions in the Operations and Support phase. For this reason, effective and efficient product support planning and execution are critical to the Air Force's ability to design, field, modernize and sustain affordable systems.


Figure 1 - Key Functional Capabilities of Product Support
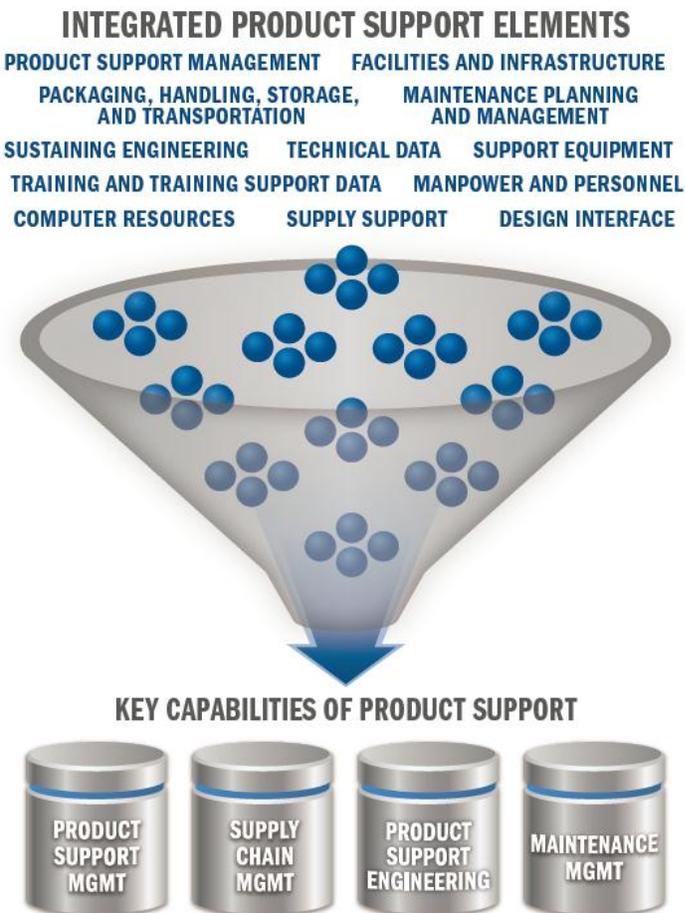
Product Support is a key life cycle management enabler that involves a diverse set of support functions required to maintain readiness and operational capability of systems, subsystems, and components. This package of support functions includes 12 Integrated Product Support (IPS) Elements that define an array of activities performed throughout a system's life cycle. However, the activities performed by these 12 IPS Elements can be synthesized into four key functional capabilities that include aspects of each element. The four key functional capabilities are Product Support Management, Supply Chain Management, Product Support Engineering, and Maintenance Management (see Figure 1).

Product support related activities are ubiquitous across the Air Force. They flow across functional and organizational lines, across platforms, and across thousands of system support activities. Delivering effective and affordable product support requires that Program Managers (PM) and Product Support Managers (PSM) have insight, oversight and visibility of critical product support activities, as well as the ability to balance key internal product support capabilities with the capabilities of our industry partners.

Currently, the Air Force makes product support decisions on a program-by-program basis. However, a wholly program-centric approach has inherent weaknesses. This existing approach does not always include consideration of program-level product support analysis and decision-making impacts on other systems, portfolios of systems, or the larger product support enterprise. In some instances, these individual program decisions may have contributed to the

atrophy of key internal Air Force product support capabilities, resulted in inefficiencies in using and sustaining product support enterprise capabilities, and created inefficiencies across public and private product support integrators (PSI) and product support providers (PSP).

This document addresses these issues by providing a vision, guiding tenets, and desired state objectives for each of the four key functional product support capabilities in order to influence the development and implementation of product support strategies for individual systems. The Tenets and Desired State Objectives described in this document are not intended to impede the programmatic chain of authority. Final programmatic decision making authority always rests with the SAE/PEO/PM chain.

The structure of this document is shown in Figure 2. The Vision provides the overall desired outcome for our Product Support Enterprise, the Guiding Tenets are the five top-level principles that should influence every product support decision we make, and the 31 Desired State Objectives describe the Enterprise level attributes of the four Key Functional Product Support Capabilities to enable the Vision.


Guiding Tenets

Vision
Affordable warfighter readiness delivered through optimized Air Force product support enterprise capabilities

Product Support Management Capability

Supply Chain Management Capability

Product Support Engineering Capability

Maintenance Management Capability

Guiding Tenets

Desired State Objectives

Desired State Objectives

Desired State Objectives

Desired State Objectives

Guiding Tenets

Figure 2 - Strategic Planning Concept

Vision

The fundamental purpose of product support is to provide warfighters with mission-ready, affordable systems and equipment. Our vision for the product support enterprise now and over the next decade is:

> **Affordable warfighter readiness delivered through optimized Air Force product support enterprise capabilities**

This vision has two key concepts:

1. "Affordable warfighter readiness" addresses the need to balance system operational safety, suitability, effectiveness, availability, and total ownership costs.

2. "Optimized Air Force product support enterprise capabilities" addresses the need to consider the effects on the Air Force's product support enterprise capabilities resulting from the implementation of individual system product support strategies.

Guiding Tenets

The product support vision is guided by five tenets. These tenets inform analysis and planning to ensure that optimal solutions for individual systems are consistent and mutually supportive of corporate Air Force priorities and the broader product support enterprise. The tenets are:

Tenet 1: *Enterprise Mindset*. In every aspect of product support planning and execution we must use an enterprise mindset.

- We must consider the impacts on product support capabilities and total enterprise costs when conducting all life cycle planning analyses. Enterprise mindset is an evolution from our program-centric approach to an approach that leverages synergies, seeks economies of scale, and proactively manages system and infrastructure capabilities to sustain essential government and industry product support capabilities.

- We must ensure our life cycle management review processes enable effective stakeholder engagement, and that comprehensive evaluations of total life cycle capabilities and costs are presented through governance and oversight forums.

- We must embrace the necessity of planning for product support early in the life cycle. Early development planning, requirements development, and Analysis of Alternatives activities must be influenced by a skilled product support advocate to ensure supportability and affordability are designed into materiel solutions and operational concepts.

- We must ensure resource requirements are linked to outcomes in such a way that the enterprise can credibly predict and measure the impact on product support performance resulting from changes in funding and other resources.

Tenet 2: *Flexibility*. Product support solutions and strategies must be flexible and responsive, adapting to ever-changing conditions affecting system lifecycles and enabling optimized use of product support enterprise capabilities while balancing affordability and minimizing life cycle costs.

- We must incorporate as much flexibility as affordable into our product support strategies and contractual arrangements with PSPs while complying with all governing policies, regulations and laws.

- We must enable affordable access to and delivery of technical data and visibility into PSP performance to increase our competitive leverage and implement changes when the value propositions for an existing product support strategy changes.

- We must design for supportability by maximizing commonality, modularity, open system architecture and standardization of support processes to increase efficiencies. Product support solutions should maximize the use of common parts and technology, product support engineering and support processes, support equipment, Information Technology (IT) and data, and training to enable infrastructure scalability and adaptability to accept new workloads.

Tenet 3: *Transparency.* Product support enterprise decision-making processes and performance must be transparent, timely and informed by enterprise-wide information technology solutions.

- We must enhance existing oversight forums, while maintaining speed of decision making and processes to execute informed and transparent enterprise decision-making processes involving all stakeholders.

- We must operate an overarching governance structure to guide product support execution at all levels of the enterprise.

- We must incorporate clearly stated and affordable information requirements into contracts to ensure appropriate rights and access to and delivery of technical data and timely reporting of actual product support performance to enable analysis, independent assessment and autonomy to change product support strategies during the life cycle.

Tenet 4: *Collaboration*. The product support enterprise must continually assess and leverage the best mix of industry and service partnerships and encourage continuous collaboration among functions, programs and process owners across the enterprise.

- We must be able to access the broad spectrum of public (all Services and Agencies) and private capabilities to achieve enterprise- and system-level objectives. These capabilities must include the right mix of the 12 IPS Elements.

- We must maximize collaboration among functions, programs and process owners to capitalize on existing technologies, processes, best practices and expertise which will reduce redundancies and costs, and improve product support effectiveness and affordability across the enterprise.

- We must continuously assess the state of product support capabilities across the enterprise to ensure the mix of public and private partnerships provides effective, affordable solutions, and complies with public law, and sustains essential capabilities from a variety of PSPs.

- We must fully leverage partnerships for product support by using creative approaches to Government-to-Government (DoD), Government-to-Industry, and Industry-to-Industry arrangements to maximize competition and provide opportunities for small business participation.

Tenet 5: *Innovation*. **Innovation must be fostered throughout the enterprise on both systems and the sustainment infrastructure.**

- We must encourage a culture of innovation to provide effective, affordable and responsive product support. We must take advantage of new science, technologies and processes as well as best practices in government and commercial sectors.

- We must enable sharing of ideas and balancing risk to achieve continuous improvement, quality, and affordability in product support.

Desired State Objectives

The desired state objectives describe the desired outcomes and attributes of the four key functional product support capabilities. Definitions of the key functional product support capabilities and descriptions of the desired state objectives are provided in the four sections below.

Product Support Management: Product Support Management is the development, implementation, top-level integration, and management of all sources of support required to deploy and maintain the readiness and operational capability of major systems, subsystems, and components. The desired state objectives for Product Support Management are:

1. Product Support Management Desired State Objectives:
1.1. Individual program product support strategies are evaluated for consistency with Air Force Product Support Enterprise Tenets and Desired State Objectives.
1.2. An agile and adaptable cadre of Product Support Managers (PSM) with the right knowledge, skills, and abilities.
1.3. Life Cycle Logisticians (LCL) are proactively involved in activities ranging from initial development planning and requirements development efforts to system disposal.
1.4. An organic capability exists to perform Product Support Business Case Analysis, contract-negotiations, RFP development, and data rights acquisition.
1.5. The option of competition is preserved throughout the life cycle.
1.6. The best product support capabilities of the organic and commercial industrial base are leveraged.

Supply Chain Management: Supply Chain Management (SCM) is a cross-functional approach to planning, sourcing, making, delivering and returning of materiel needed to ensure all required equipment/capabilities are available to support operational demands at the lowest possible life cycle cost. The desired state objectives for Supply Chain Management are:

2. Supply Chain Management Desired State Objectives:
2.1. Supply chain solutions are performance-based and right-sized to achieve optimization across the public and private sector, leveraging integrated end-to-end demand and supply planning, and sourcing and distribution strategies that are aligned to meet warfighter requirements through enterprise capabilities.
2.2. Supply chain influences are built into material and non-material solution designs to meet both operational requirements and long-term supply chain optimization.
2.3. Planning processes are fully integrated to meet customer requirements and leverage supplier throughput and cycle capabilities.
2.4. Resource requirements are linked to outcomes in such a way that we can credibly predict the impact on SCM performance resulting from funding changes.
2.5. Program Management offices have a robust customer relationship management (CRM) capability enabling them to understand, anticipate and influence customer requirements and expectations.
2.6. An enterprise product lifecycle management (PLM) product data management capability that provides a common source for engineering data, bill of materials (BOM), configuration management and technical orders to optimize supply chain planning and execution.
2.7. Standard, integrated IT solutions are leveraged to provide organic total asset visibility that enables synchronized information flow among customers and suppliers.
2.8. Sourcing and distribution strategies that ensure a robust supplier base, allowing innovative competitive strategies leveraging spend and requirements to improve delivery performance.
2.9. An Air Force level Supplier Relationship Management capability that leverages all purchasing to synchronize product support decisions and supplier performance with enterprise desired state objectives.
2.10. Partnership efforts with industry are pursued vigorously, in order to aid in the rapid infusion of best-in-class supply chain practices.
2.11. A robust, responsive and effective risk management capability to proactively identify, assess and mitigate high-probability/high-impact risks to the supply chain.

Product Support Engineering: Product Support Engineering consists of systems engineering, both developmental and sustaining, that supports product support life cycle management activities in order to achieve the desired sustainment metric outcomes for a program. Product Support Engineering activities begin early in system development, with a focus on ensuring the program's sustainment KPPs and KSAs are achieved through a system design that optimizes availability and reliability while reducing life cycle costs and logistics footprint. Product Support Engineering also includes the technical efforts required to ensure the continued operation and maintenance of in-service systems with managed risk. The desired state objectives for Product Support Engineering are:

3. Product Support Engineering Desired State Objectives:
3.1. Robust organic product support engineering capability exists to effectively contribute to the Program Manager's responsibility to assure the Operational Safety, Suitability and Effectiveness of systems or end items or the Mission Assurance of Space Systems.
3.2. Cross-cutting, enterprise-wide technical solutions are developed, leveraged and effectively implemented as best practices across the Product Support Enterprise.
3.3. Product support engineering occurs in a collaborative environment that leverages both organic and contractor resources, processes and tools using partnering arrangements and shared access to potential solutions.
3.4. Robust product support engineering analysis enables risk assessments, cost estimates, technology insertions and modification decisions across the product support enterprise to inform program cost, schedule and performance decisions.
3.5. Product support engineering resource requirements are linked to outcomes to credibly predict the impact on system performance resulting from increases or decreases in funding.
3.6. Rigorous developmental engineering planning capabilities and processes are applied early in the life cycle to ensure the design optimizes the balance between reliability, availability, maintainability, supportability, technical performance and life cycle cost.
3.7. Vital Systems Engineering inputs, planning capabilities, and processes are integrated with the IPS Elements throughout the life cycle, ensuring product support requirements are addressed in the design, testing, manufacturing, and remanufacturing of the system, sub-system or components.

Maintenance Management : Maintenance Management is the development and execution of maintenance concepts and requirements for the life of the system for both hardware and software. The desired state objectives for Maintenance Management are:

4. Maintenance Management Desired State Objectives:
4.1. A robust, modern, agile and properly-sized maintenance capability.
4.2. The proper balance of organic maintenance capabilities and a strong commercial base to support operational and statutory requirements.
4.3. Decisions are aligned to optimize public and private maintenance capabilities to reduce cost and improve warfighter support.
4.4. Real-time data is used to make objective and more effective capacity utilization decisions to achieve Strategic Network Optimization and Repair Network Integration.
4.5. A multi-skilled/consolidated-skilled organic workforce is available to support maintenance requirements.
4.6. Interoperable Maintenance, Repair, and Overhaul Information Technology systems that use common data sources to support maintenance, forecasting, planning, execution and product support design influence.
4.7. Maintenance capability and efficiency is maximized through blended partnerships between the organic and private sectors to enable the sharing of best practices and concepts.

Building an Enterprise Strategy

This document establishes the vision and desired state objectives for the Air Force's product support enterprise. However, more work must be done to develop and execute detailed action plans to fully implement the desired state objectives. While the Deputy Assistant Secretary for Logistics (SAF/IEL) will continue to spearhead this effort, the active engagement and participation of senior leaders and subject matter experts from SAF/AQ, AF/A4/7, AFMC and AFSPC are essential to successful implementation.   SAF/IEL will lead integration among all stakeholders, monitor progress on implementation activities, and report implementation status periodically to the Integrated Life Cycle Management Executive Forum.