



# Public-Private Partnering for Sustainment GUIDEBOOK



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# Foreword

This guidebook for sustainment partnering was prepared by the Office of the Assistant Secretary of Defense (Logistics & Materiel Readiness). It is one of several guides and references available via the Defense Acquisition University's Acquisition Community Connection (ACC) web site. Throughout this guide, embedded links will lead to related materials in the other documents. They include:

- Defense Acquisition Guide, Chapter Five
- Diminishing Manufacturing Sources and Material Shortages Guidebook
- DoD Acquisition Logistics Handbook, MIL-HDBK-502
- DoD Reliability, Availability, Maintainability-Cost (RAM-C) Report Manual
- Integrated Product Support Element Guidebook
- Joint Capabilities Integration and Development System Manual
- Logistics Assessment Guidebook
- Operation and Support Cost Management Guidebook (awaiting publication)
- Partnering for Sustainment (this guidebook)
- Post-Initial Operational Capability Review Guidebook
- Product Support Business Case Analysis guidebook
- Product Support Manager Guidebook

The complete web site is at <https://acc.dau.mil/productsupport>.

This partnering guidebook is designed to be a first iteration of a document that will be updated over time with additional information, groundbreaking case studies and changes to law and policy. Inputs about its content are welcome; see the last section and back cover for information about ways to participate and how to provide feedback.



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# Public-Private Partnering for Sustainment

## Introduction

By law and policy, the Department of Defense (DoD) maintains a “ready and controlled” source of technical competencies and resources necessary to ensure effective and timely response to mobilization, national defense contingency situations, and other emergency requirements.<sup>1</sup> One of the keys to maintaining those competencies is embodied in the Department’s major organic (that is, government-owned and operated) product support activities, augmented with commercial contract support. Organic and contract capabilities must work together to provide effective and efficient sustainment for the operating forces. A fully integrated defense sustainment industrial base, one that leverages the competencies, infrastructure, and resources of both the public and private-sector, is essential to our national security. To facilitate this collaborative effort, a series of legal authorities specifically authorize depot maintenance activities and other product support activities to enter into public-private partnering arrangements, also referred to as partnering. Public-private partnering is an essential tool to sustain modern weapon systems through their life cycle. It serves as a bridge, melding the public and private-sectors in support of increasingly complex advanced technologies, and the combined technical competence is essential to produce an assured mission response.

The department’s involvement in overseas contingency operations has tested partnerships in what is now the longest set of such operations ever prosecuted by the United States. Our armed forces have performed well despite a range of operating environments that have taxed the limits of personnel and materiel. Our unmatched sustainment capabilities have been instrumental in achieving this level of performance, and partnerships have played an important role in the endeavor.

This coming decade holds the prospect of constrained defense budgets and associated sustainment workloads, a marked transition away from extended contingency operations and transition to a new generation of technologically advanced systems and equipment. Partnerships have a critical role to play in the transition. For that reason, this guide is designed to refresh the knowledge base on partnering processes and procedures, encourage further innovation in structure and applications, and provide updated case studies on successful applications.

The guide also contains links to additional information, establishes an annual discussion forum for practitioners, and invites feedback for further improvement. Please use these resources and help keep public-private partnering on a continuous upward trajectory for innovation and application.

## Overview

This guide addresses public-private partnering (defined in the next section) as a useful tool for all aspects of integrated product support. The majority of existing partnerships, reflecting the focus of current partnering statutes and policy, center on the depot maintenance function. But that focus does not preclude application to other product support elements within, or in addition to,

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<sup>1</sup> 10 U.S.C. 2464(a)(1).

those partnerships, and work is underway to provide additional authorities to encompass a broader range of sustainment functions and processes.

The guide is intended for use by program and product managers (PMs), product support managers (PSMs), product support integrators (PSIs), industry, and organic product support providers (PSPs), including depot maintenance participants in the partnering process. The guide is intended to provide best practices that facilitate public-private partnerships, and to frame the application of partnering in the remaining integrated product support elements encompassing the full scope of defense system sustainment activities. It builds on a body of information that has been collected by the Office of the Deputy Assistant Secretary of Defense for Maintenance Policy and Programs (OSD Maintenance). It reflects defense policy on depot maintenance partnering (DoD Instruction [DoDI] 4151.21), as well as the legal authorities that authorize public-private partnerships; and provides updated data about innovative approaches, successful implementations, and information resources.

Despite many years of successful application, partnering still holds substantial potential for broader use across all sustainment processes comprising integrated product support. Accordingly, this guide contains procedural strategies and assessment tools useful to parties who are gaining an initial familiarity with partnering applications, together with more experienced partnering practitioners.

DoD Directive (DoDD) 5000.01 requires sustainment strategies to include the best use of public and private sector capabilities through government/industry partnering initiatives, in accordance with statutory requirements.

This guide is organized into four sections. The first two sections address the what, when, why and how of partnering; the third section presents a set of case studies that illustrate successful partnerships in a broad range of applications; and the final section describes additional information resources and invites feedback for continuing improvement.

# Section 1. About Partnering

## 1.1 Partnering Defined

In the arena of integrated product support, a public-private partnership is defined by DoD as a cooperative arrangement between an organic product support provider and one or more private-sector entities to perform defense-related work, utilize DoD facilities and equipment, or both. Other government organizations, such as program offices, inventory control points, and sustainment commands, may be parties to such agreements.<sup>1</sup>

There is a key distinction between partnerships and defense contracts. All partnerships are implemented within the framework and business arrangements established by a contract between the DoD and a private-sector entity (e.g., an original equipment manufacturer [OEM], small business, or other third-party logistics provider [3PL]). Defense contracts specify the work tasks, articles, services, and outcomes to be provided by the private-sector entity. They are generally one-sided in their directive requirements—from the government to the contractor. Partnerships enable a more collaborative relationship in which parties from both public and private-sectors are able to leverage and maximize the use of their resources in ways that were not specified in their underlying contracts. Resources may include goods, services, infrastructure, products, or processes employed to more efficiently and effectively accomplish product support. Examples range from allowing contractors to utilize depot maintenance facilities, to workshare agreements in which joint organic-contractor teams join forces on a common workload, to contractor purchase of government-provided products and services. The parties may be separately funded by defense contracts or work orders. Depending on the type of cooperative arrangement, the partnership may entail payment between the partners for goods and services produced, when authorized by law.

By policy, products and services produced by organic product support activities for partnerships will be defense-related.

Defense partnerships that involve the sale of goods or services are a product of collaboration between elements of the defense sustainment industrial base. In that sense, they are designed to facilitate the function of depot maintenance and other product support elements as they sustain the operating forces.

### 1.1.1 Basic Types of Public-Private Partnerships

There are three basic types of public-private partnerships in use within the defense sustainment community. Two are specifically authorized by law, while the third does not require legal authority. The bulk of the current authorities for partnerships are focused on depot maintenance. The three basic types and their related legal authorities are as follows:

- *Workshare*—A partnership in which a government buying activity, in collaboration with a contractor and an organic product support activity (predominantly depot maintenance ac-

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<sup>1</sup> DoDI 4151.21, *Public-Private Partnerships for Depot-Level Maintenance*, April 25, 2007. Even though the definition cited from this instruction is in a depot maintenance context, it applies to the broader range of integrated product support activities and elements.

tivities to date), determines the best mix of work, capitalizing on each partner's capabilities. The workload is then shared between the contractor and the organic activity. The contractor is funded through a contract, and the organic activity is funded through a project or work order (in the case of depot maintenance). The partnering agreement between the contractor and organic activity focuses on the roles and responsibilities of each partner. The partners work jointly to accomplish the overall requirement. Funding is not exchanged between the partners under a workshare agreement; therefore, workshares do not require specific legal authority.

- *Direct Sale (sales of articles and services)*—An arrangement, currently authorized primarily for depot maintenance activities designated as centers of industrial and technical excellence (CITEs), arsenals and ammunition plants, and other working capital-funded industrial facilities under specified circumstances, whereby military and commercial entities enter into a contractual relationship for the sale of depot maintenance articles or services to an outside (non-government) entity, usually a contractor.
  - A direct sale agreement begins with a government contract that funds a commercial activity. In turn, after development of a commercial relationship with an appropriate implementing agreement, the contractor pays an organic depot maintenance activity (or other industrially funded activity as authorized) for goods and services provided to the contractor. Depending on the legal authority applied, the funds may be paid to the U.S. Treasury or directly to the depot's working capital fund. The contractor may also supply materiel to the depots in support of the partnership. The purchase of articles or services by the commercial entity establishes a quasi-subcontract relationship for the depot, which ensures (as authorized by law) the depot can be held accountable for willful misconduct, gross negligence, or the failure of the government to comply with cost, schedule, or performance requirements in the contract agreement.
  - Primary legal authorities for direct sales agreements are 10 United States Code (U.S.C.) 2474 and 4544, both of which authorize the payment from non-government entities to working capital funds for articles and services produced by the working capital funded activity.<sup>2</sup>
  - Additional authority for "sale of articles and services" is in 10 U.S.C. 2208(j), 2563, 4543, 4544, and 7300, and in 22 U.S.C. 2770 for specified circumstances.
- *Lease*—An arrangement that allows a private-sector entity to have access to, and beneficial use of, facilities or equipment that is real or personal government property. Facilities and equipment may be made available for lease, so long as the arrangement does not preclude the government activity from performing its mission. The goal is to make government-owned facilities more efficient through better utilization.
  - Lease payments may be made as monetary payments from the contractor to the government activity, or as full-value "in-kind" consideration (e.g., provision of property

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<sup>2</sup> Section 2474 contains additional authorities that are beneficial to the partnering process. This guide does not attempt to repeat the content or explain the procedures for the multiple legal authorities that apply to public-private partnering; consult the statutes for specific details.

maintenance, protection, alternation, repair, improvement, restoration; construction of new facilities; provision of facilities; and provision or payment of utility services).

- o 10 U.S.C. 2474, 2667 and 4544 are the primary authorities for the lease of non-excess real property. Section 4544 does not require a CITE designation.

**1.1.2 Other Partnering Authorities**

Additional partnering authorities apply to other defense industrial activities beyond depot maintenance, including the Defense Logistics Agency. Many of these authorities are designed to facilitate test and development activities and cooperative research and development agreements (CRADAs). Consult with the government organizations to explore specific applications.

**1.1.3 Statutes, Regulations, and Guidance**

Numerous defense-related statutes and regulations affect public-private partnerships, with the majority focused on depot maintenance. In general, these issuances do not prohibit the addition of other product support elements to partnering agreements. Some key examples are described briefly in Table 1-1, which includes policy directives and related guidance. The table also includes references that, although not directly related to partnering, shape the partnering process. The descriptive language for each reference is meant to be for illustration only; consult the actual language in each reference for definitive guidance.

**Table 1-1. Statutes, Regulations, and Guidance**

<b>Authority</b>	<b>General description</b>
10 U.S.C. 2208	Permits the Secretary of Defense to establish DoD working capital funds. Permits, under specified circumstances, the sale of articles and services inside and outside DoD.
10 U.S.C 2320	Addresses government rights to technical data.
10 U.S.C. 2460	Defines depot maintenance and repair.
10 U.S.C. 2462	Addresses contracting requirements for certain supplies and services when cost is lower.
10 U.S.C. 2464	Establishes the requirement for core logistics capabilities.
10 U.S.C. 2466	Limits the proportion of funding that may be used for contract depot maintenance.
10 U.S.C. 2469	Provides an exception from the requirement for competition for public-private partnerships that involve work performed at a CITE ( see 10 U.S.C. 2474).
10 U.S.C. 2474	Requires the military departments to designate depot-level maintenance activities as CITEs, authorizes and encourages public-private partnerships, permits performance of work related to depot-level maintenance core competencies, permits use of facilities and equipment, and permits sales proceeds from public-private partnerships to be credited to depot accounts.
10 U.S.C. 2501	Sets national security objectives concerning national technology and industrial base.
10 U.S.C. 2539b	Authorizes the sale of services for testing of materials, equipment, models, computer software, and other items.
10 U.S.C. 2563	Authorizes the sale of articles or services outside DoD (excluding those authorized under 10 U.S.C. 4543) under specified conditions.
10 U.S.C. 2667	Allows leasing of non-excess facilities and equipment.
10 U.S.C. 4543	Authorizes Army industrial facilities that manufacture cannons, gun mounts, and other items to sell articles or services outside DoD under specified conditions.

**Table 1-1. Statutes, Regulations, and Guidance**

<b>Authority</b>	<b>General description</b>
10 U.S.C. 4544	Authorizes, within specified limitations, Army working capital-funded industrial facilities to enter into contracts or other cooperative arrangements with non-Army entities to carry out a variety of activities under specified conditions.
10 U.S.C. 4551	Defines terms relating to the Armament Retooling and Manufacturing Support initiative.
10 U.S.C. 7300	Authorizes naval shipyards to sell articles or services to private shipyards for fulfillment of contracts for nuclear ships.
10 U.S.C. 7303	Authorizes Naval Surface Warfare Center, Carderock, to conduct investigations into shapes and forms of U.S. vessels and aircraft and to conduct experiments at the Model Basin for private entities.
15 U.S.C. 3710a	Permits the use of cooperative research and development agreements.
22 U.S.C. 2754	Allows sales or lease of defense articles or services to friendly countries under specified conditions.
22 U.S.C. 2770	Allows sales of articles and services to U.S. companies for incorporation into end items to be sold to a friendly foreign country or international organization under specific conditions.
1995 National Defense Authorization Act, Section 337 (P.L. 103-337)	Directs the Secretary of Defense to encourage commercial firms to enter into partnerships with depot-level activities for specified purposes.
FAR 45.1	Permits the provision of government-furnished material, facilities, and equipment to contractors.
FAR 45.3	Provides for contractor use and rental of government property.
FAR 51.100	Authorizes commercial contractors to use government (i.e., DLA) supply sources
DoD 7000.14-R, DoD Financial Management Regulation	Volume 2B, Chapter 9, Section 01, paragraph 090105 contains provisions for partnerships.
DoDI 7041.3, Economic Analysis for Decision Making	Outlines economic analysis requirements.
OMB Circular A-94	Provides general guidance for conducting benefit-cost and cost-effectiveness analyses, and specific guidance on the discount rates to be used when evaluating federal programs whose benefits and costs are distributed over time.
<i>Defense Acquisition Guidebook, Section 5.1.5.2</i>	Includes partnering as a consideration to be addressed when determining the best mix of public and private sector capabilities to meet user requirements, sustainment opportunities, and statutory requirements.
<i>Diminishing Manufacturing Sources and Material Shortages (DMSMS) Guidebook</i>	A guidebook of best practices and tools for implementing a DMSMS management program. Compilation of the best proactive practices from across DoD for managing the risk of obsolescence. Also identifies assorted measurement tools that may be useful in analyzing and tracking the effectiveness of DMSMS programs.
<i>Logistics Assessment Guidebook</i>	Supports the USD(AT&L) initiative on "Better Buying Power" by addressing the themes of affordability, controlling cost growth, and innovation in industry. Provides a structure for conducting logistics assessments and helps components establish baseline assessment criteria.
<i>Operation and Support (O&amp;S) Cost Management Guidebook</i>	Provides an overview of O&S cost management; transparency to program management offices on how O&S Cost estimates are captured throughout the lifecycle management process and used by decision makers; standardizes O&S cost metrics usage, nomenclature, and life cycle product support management processes across the Department; establishes metrics which will inform decision makers throughout the life cycle on O&S costs.
<i>Post-Initial Operational Capability Review Guidebook</i>	Complements Part VI of the <i>Logistics Assessment Guidebook</i> .

**Table 1-1. Statutes, Regulations, and Guidance**

Authority	General description
Product Support Business Case Analysis Guidebook	Supports the USD(AT&L) initiative on “Better Buying Power” by laying out a uniform methodology for accurate, consistent, and effective support of value-based decision making, while better aligning the acquisition and lifecycle support processes.
Product Support Manager Guidebook	Reference guide addresses key requirements for managing product support across the entire life cycle of weapon systems.

### 1.1.4 Potential Scope of Partnerships for Program Management

Innovative partnerships frequently involve multiple sustainment elements, such as linking a manufacturer’s supply chain to a depot repair operation. This is consistent with defense policy. Although not specifically cited in current statutes, there is no language restricting the implementation of partnerships in functions beyond depot maintenance. Workshare (or similar) agreements in which there is no payment of funds by the contractor to the government for the sale of articles or services can be implemented for any product support element. For example, partnerships for supply support involving workshare agreements that use a combination of organic and commercial elements can be established under existing partnering authority.

PMs can apply partnerships as a way to comply with legal requirements, such as core capability requirements (10 U.S.C. 2464) while also achieving synergies from the combination of private sector and organic resources. The potential scope of partnering has few constraints and is open to creative arrangements developed by the prospective partners.

### 1.1.5 Product Support and Public-Private Partnerships

Product support is defined as “a package of logistics support functions necessary to maintain the readiness and operational capability of a system or subsystem.”<sup>3</sup> Partnering is integral to the weapon system product support strategy that PMs document as part of their acquisition strategy. The “package of logistics support functions” includes materiel management, technical data management, maintenance, training, cataloging, configuration management, reliability growth, and failure reporting and analysis.

Additional product support elements may be included in partnerships that are primarily associated with depot maintenance, to the extent those elements can be incorporated into the depot maintenance operation. They can also be provided as a part of workshare agreements. For example, process engineering might be associated with the depot maintenance production operation. Other examples reflect workshare or reciprocal resourcing agreements for collaboration on sustainment engineering, management of OEM-provided spares, and other elements that are funded separately but combined collaboratively in depot maintenance partnering agreements. The bulk of current partnering authorities enables rather than restricts partnering options. Current legislative initiatives may further open the field of possibilities, including a broader range of industrial facilities and partnering agreements beyond the scope of depot maintenance.

<sup>3</sup> The *Defense Acquisition University Glossary* at <http://acc.dau.mil/communityBrowser.aspx?id=17650> defines these terms.

Defense acquisition policy requires PMs to develop and implement performance-based logistics (PBL) strategies that include the best use of public and private-sector capabilities through government-industry partnering initiatives. The legal authorities outlined in Table 1-1 provide a fairly broad range of support for these initiatives.

### *1.1.6 Performance-Based Logistics and Public-Private Partnerships*

DoD Directive (DoDD) 5000.01 addresses PBL as a sustainment strategy to optimize total system availability while minimizing cost and logistics footprint. Sustainment strategies include the best use of public and private-sector capabilities through government-industry partnering initiatives, in accordance with statutory requirements.<sup>4</sup> DoDI 5000.02 provides additional guidance on PBL structures by re-naming them performance-based life-cycle product support (PBL)—either name applies to the acronym.<sup>5</sup> PBL offers the best strategic approach for delivering required life-cycle readiness, reliability, and ownership costs. Sources of support may be organic, commercial, or a combination of organic and commercial, with the primary focus on optimizing customer support, weapon system availability, and reduced ownership costs.

To carry out new operational and transformation strategies, warfighters require weapon systems that are ready and reliable. Acquisition policy places full accountability for readiness on the PM. The PM, in turn, may obtain system and subsystem sustainment from organic providers, commercial providers, and partnerships between organic and commercial providers. As part of DoD's core capability requirements, PMs are required to develop and implement sustainment strategies, including PBL arrangements that optimize total system availability while minimizing cost and logistics footprint.

Partnerships can help achieve performance-based outcomes by enabling a wide range of performance improvements, as illustrated below.

- Enhanced supply chain management
- Piece-part availability
- Workload management
- Sustainment Engineering
- Enhanced system design and processes
  - Technology insertion
  - Continuous modernization
  - Value engineering change proposals
- Continuous process improvement
- Component reliability
- Best commercial practices

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<sup>4</sup> DODD 5000.01, *The Defense Acquisition System*, May 12, 2003, paragraph E1.1.17.

<sup>5</sup> DODI 5000.02, *Operation of the Defense Acquisition System*, December 8, 2008, Enclosure 2, paragraph 8.c.(1)(d).

- Condition Based Maintenance - Plus
- Mitigation for obsolescence and diminishing manufacturing sources
- Industry involvement in
  - Organic workforce professional development
  - Support and test equipment
  - Facility/technology upgrades
- Gain sharing

### *1.1.7 Core Capability Requirements*

As mentioned earlier, the law (10 U.S.C. 2464) requires that DoD maintain a “core” capability. That capability must be government-owned and -operated, and employ government personnel and government-owned and -operated equipment and facilities. The capability includes the ability to maintain and repair the weapon systems and other military equipment necessary for the military services to fulfill DoD’s strategic and contingency plans. Moreover, sufficient workload must be assigned to the government-owned and -operated facilities to ensure cost efficiency and technical competence in peacetime, while preserving necessary surge and reconstruction capabilities required for contingency operations.<sup>6</sup>

For depot maintenance, partnerships can help satisfy core logistics capability requirements by establishing relationships between commercial providers and DoD’s organic depots, with the commercial partner providing workload to the organic depot partner to help sustain core capabilities while utilizing contractor sustainment support. The range of skills and capabilities that can be brought to bear by any of the parties presents a broad set of possibilities, including the potential for an integrated public-private workforce. Another statute, 10 U.S.C. 2474, encourages private-sector use of excess capacity in CITEs by excluding the amount expended for contract performance at the CITE from the 50/50 limitation in 10 U.S.C. 2466. DoDI 4151.20 addresses the depot maintenance core capability determination process; a new instruction to address the depot source of repair assignment process is currently in development.

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<sup>6</sup> Policy guidance concerning the core determination process and related topics such as the depot source of repair process are addressed in the family of directives under DoD Directive 4151.18; consult Table 1.1 above for additional information.



## **Section 2. Value, Timing, Risk, and Keys**

### **2.1 Value Proposition for Public-Private Partnerships**

Partnerships should generate a beneficial effect on DoD sustainment and warfighter operational readiness. Beneficial effects can range from improved utilization of DoD facilities and infrastructure to improved system or subsystem repair processes that leverage public and private competencies. Congress, through the inclusion of enabling language in 10 U.S.C. 2474, specifically indicated the primary objective of partnerships is to "...reengineer industrial processes and adopt best-business practices at...Centers of Industrial and Technical Excellence in connection with their core competency requirements, so as to serve as recognized leaders in their core competencies throughout the Department of Defense and in the national technology and industrial base." The tangible outcome from this process is the improvement in operating efficiency and effectiveness of DoD depots to facilitate operational readiness and materiel availability.

#### ***2.1.1 PRIVATE-SECTOR BENEFITS FROM SUCCESSFUL PARTNERSHIPS***

Commercial activities stand to gain significant benefits from partnerships. Examples include the following:

- Avoidance of capital investment through utilization of existing organic facilities and infrastructure
- Access to a motivated, skilled, and fully trained organic workforce with applicable expertise, comparable labor rates, and long-term workforce stability
- Ability to leverage process permits and related environmental and hazardous materials licensing already in place at organic facilities
- Access to laboratories, centers, ranges, and test facilities for the testing of materials, equipment, systems, software, and related specialized capabilities
- Potential reduction in operating costs through the use of shared facilities, equipment, information, and related resources
- Establishment of more collaborative working relationships between the public and private-sectors
- Potential to expand the activity's business base.

#### ***2.1.2 PUBLIC-SECTOR BENEFITS FROM SUCCESSFUL PARTNERSHIPS***

Partnerships also provide benefits to organic activities. They:

- contribute to the ability to sustain core capabilities;
- improve facility and equipment utilization, decreasing overhead costs per unit;

- introduce commercial innovation, technology, and management practices into organic product support processes;
- provide value-added commercial support such as provision of spares to prevent or mitigate awaiting parts conditions, technical support to assist in determining allowable variances in materiel condition or waivers from inspection criteria, and adjustments to parts re-use criteria;
- facilitate access to commercial technical data, technologies, and repair processes not otherwise available;
- foster collaboration between organic and commercial activities to develop improved processes and the possibility of additional partnerships; and
- apply commercial product support resources to the partnership workload that may not otherwise be available organically.

PMs can benefit by reducing investments in what could otherwise be duplicative capabilities, and optimizing solutions for weapon system logistics support. Partnerships enable the accomplishment of core requirements under performance-based arrangements.

The particular benefits depend on the specific circumstances. The strongest partnerships actively seek synergies that are unique to each working relationship.

Taken as a whole, partnerships can provide synergies that neither partner could generate separately. Examples include access to skilled artisans and engineering expertise, improved supply chain response, and collaborative production management. Successful partnerships also can generate additional partnering opportunities.

### *2.1.3 COMMON OUTCOMES OF SUCCESSFUL PARTNERSHIPS*

Some of the outcomes of successful public-private partnerships accrue to all of the parties in the partnership.

- Partnerships can generally improve overall product support.
- When partners are able to take advantage of their combined strengths and competencies, the benefits can include overall project cost reduction through joint efficiency improvements and a stronger ability to challenge cost elements that do not add value to the required capability.
- Traditional approaches can be assessed in a partnership and new ways of working together explored, driving innovation and flexibility while reducing costs and improving overall performance. Effects can include substantial reductions in the time to initiate projects, lower overall cost of doing business, and shorter sustainment response cycles.

- Greater transparency and openness of business objectives increase confidence between the parties involved in partnerships, allowing them to plan and manage more effectively.
- Increased trust over time allows the partners to consider new innovations, such as the possibility of integrated workforces and management structures.<sup>1</sup>

### *2.1.4 SUMMARY VALUE PROPOSITION FOR PARTNERSHIPS*

Partnerships should make sense from a business perspective. The business case or value proposition for partnerships should express value from the standpoint of all the partners to be considered worth the effort.

When partnerships are formed early in the life cycle, there may be less quantitative data available to justify their formation. Alternative approaches to satisfying the requirement for a business case analysis mandated in DoDI 4151.21 currently can include use of over-arching product support business cases. Those additional approaches are under review, with an objective of facilitating the approval process for new partnerships.

The value proposition for a partnership should be reviewed at intervals to assure the partnership remains worthwhile for all partners.

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<sup>1</sup> Of course, proposed partnering agreements are subject to legal and policy review to assure that they meet applicable requirements.

## 2.2 When to Partner

The decision to partner can be a complex one and is unlikely to be made based on a single advantage or disadvantage. If the answer to any of the following questions is yes, then partnering should be considered as part of the overall acquisition strategy:

- Are the requirements susceptible to change because they are constantly evolving?
- Is the approach incremental?
- Does the maintenance concept involve the PSI/OEM?
- Is technology insertion in the repair process or the product likely?
- Is there potential for efficiencies in the delivery of the equipment or service?
- Will the solution need to be developed throughout the project?
- Are there strong mutual dependencies in which joint management would be beneficial?
- Are project risks particularly difficult to predict or quantify? Is the best approach for the parties to work together on risk identification, assessment, and management?
- Is there a sole source of supply or is competition relatively weak?
- Are there key restructuring or rationalization issues to be addressed?
- Does the PM need to develop a sustainment concept that satisfies both core and performance-based requirements?

### 2.2.1 ASSESSING PARTNERSHIPS—CONCLUSION

Partnering requires careful assessments of costs, benefits, and risks; clear and comprehensive agreements between the prospective partners; and proactive work to develop the relationship, including all of the related work forces. Effective partnering needs early, thorough planning; recognition of evolving acquisition strategies; and joint government-industry management plans.

Careful assessments and planning are important to support the formation of partnerships. Documentation should possess sufficient detail to make the appropriate point or business case; preliminary estimates may be the only available data early in a partnership's life.

## 2.3 The Life Cycle of Partnering Arrangements

There are at least two ways to view a partnership's life cycle. The first is to view partnerships as collaborative relationships that frame the partnering agreements. The second is to view partnering as an integral part of acquisition and sustainment and the opportunities that may exist throughout that life cycle.

### 2.3.1 THE LIFE CYCLE OF COLLABORATIVE AGREEMENTS

An eight-stage framework has been defined in a British standard to reflect the overall life cycle of collaborative relationships.<sup>2</sup> The intent of the standard is to assist organizations to assess and develop their own particular approach to collaborative business relationships. The following eight stages are an adaptation from that standard and are provided for information.

- *Stage 1, Awareness*—The overall strategic corporate policy and processes that lead to incorporating a collaborative endeavor when it can add value.
- *Stage 2, Knowledge*—Development of knowledge about a specific business opportunity to support the development of a business case and benefits analysis.
- *Stage 3, Internal Assessment*—A structured assessment of an organization's capability and maturity to successfully engage in a collaborative initiative.
- *Stage 4, Partner Selection*—Undertake a structured approach to the identification, evaluation and selection of appropriate partners.
- *Stage 5, Working Together*—Ensure that the partners establish the appropriate operational structure, governance, roles and responsibilities to effectively achieve desired business objectives.
- *Stage 6, Value Creation*—Establish procedures that seek to build value out of the joint relationship.
- *Stage 7, Staying Together*—Ensure effective measurement and monitoring of the relationship to maintain its optimum performance.
- *Stage 8, Exit Strategy*—Develop and maintain an effective exit strategy for disengagement where and when appropriate.

The eight stages reflect a fundamental framework for forming, managing, and successfully completing partnership arrangements.

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<sup>2</sup> British Standards Institution (BSI) publication BS 11000-1:2010, *Collaborative Business Relationships, Part 1 "A Framework Specification,"* October 2010.

2.3.2 PARTNERING IN THE ACQUISITION AND SUSTAINMENT LIFE CYCLE

Ideas for life-cycle partnering are listed in Table 2-1, aligned with major acquisition and sustainment events and milestones. Even though the ideas are couched in terms of depot maintenance partnering, they are applicable to any product support element for which partnering is a viable option.

**Table 2-1. Life -Cycle Possibilities for Partnering**

Timing	Suggestion for Partnering-Related Activity
Pre-Milestone A	
Materiel solution analysis	Start partnering dialog early with PM
	Provide initial introduction of provisional depot to PM
	Explore capabilities, opportunities, and avenues to provide depot maintenance assistance
Sustainability objectives	Assist in establishing sustainability objectives
	Evaluate product support capabilities that can be applied
Materiel solution	Assist in developing materiel solutions
	Assist in design of functional requirements for support, maintenance concepts, and technologies
Pre-Milestone B	
Technology development	Assist in defining functional requirements for supportability
Engineering and manufacturing development	Assist in product support strategy development and planning
	Assist in source selection planning
	Offer partnerships to competitors in source selections
	Complete the core capability requirements analysis and depot source of repair assignment process.

**Table 2-1. Life -Cycle Possibilities for Partnering**

Timing	Suggestion for Partnering-Related Activity
Pre-Milestone C	
Formal partnership formulation	<p>Assist in PBL planning including depot maintenance planning; set joint objectives, aims, vision, and identify business drivers</p> <p>Conduct joint risk and opportunity management including a careful identification of potential risks and development of effective management processes</p> <p>Develop a value proposition to justify the partnership as applicable.</p> <p>Conduct legal and policy review</p> <p>Provide initial partnering for developmental support</p> <p>Define transparent information exchanges between the partners, including an identification of information required, sources, and timing.</p> <p>Establish management and governance processes to define responsibilities, authorities, management planning, and steps toward relationship management</p> <p>Devise issue management processes to quickly resolve issues at the lowest level using joint methodologies</p> <p>Create effective communications links to all stakeholders including updates to the partnering agreements, as required</p> <p>Jointly define management information systems and processes, including interchange methodologies</p> <p>Include incentives, rewards and protection, including indemnification to the extent they are required</p> <p>Agree on an exit strategy, including procedures for ending the agreement</p> <p>Report partnership formation and status, as applicable.</p> <p>Demonstrate partnership possibilities</p>
Low Rate Initial Production (LRIP)	<p>Implement partnership operations</p> <p>Demonstrate product support capabilities</p>
Production and deployment	Scale partnership capabilities to meet sustainment requirements
Operations and support	<p>Perform partnership activities</p> <p>Establish and train field teams</p> <p>Develop training requirements, including partnerships using commercial sources</p> <p>Conduct quality and materiel deficiency reporting analyses</p> <p>Link item unique identification (IUID) enablers to maintenance histories and shop findings</p> <p>Perform tailored repair versus overhaul</p> <p>Use diminishing or obsolescent source replacement</p>
End of life	<p>Monitor variable workloads</p> <p>Plan storage</p> <p>Plan reclamation</p> <p>Plan recycling</p> <p>Plan disposition</p>

## 2.4 Partnership Relationship Management

Effective relationship management is an important part of many successful business enterprises and is a key factor in making partnering agreements work. The relationship between DoD and industry must remain rooted in continuously improving performance and delivering better value.

Establishing and sustaining the right subculture and associated behaviors from all partners is a critical part of the overall project’s success. In particular, both of the partnering workforces may initially have concerns about the ultimate objectives and implications of a partnering arrangement. There must be sufficient trust and confidence to proceed in both the workforce and management of all partners. Careful preparation to manage relationships at a number of levels is essential. All parties must understand the strategy for relationship building and be educated and trained on the subject. Effective partnering relationships rely heavily on having the requisite change management skills, competencies, and training.

Table 2-2 examines various partnership relationship issues in some detail. In essence, Table 2-2 characterizes a spectrum of possible states for relationships—measured in terms of specific issues and described in terms of an overall characterization—ranging from “failing” to “collaborative.” The matrix may prove useful when assessing the current maturity of a partnership relationship and identifying areas for potential improvement.

**Table 2-2. Partnership Relationship Management Matrix<sup>3</sup>**

	<b>Failing</b>	<b>Reactive</b>	<b>Performing</b>	<b>Cooperative</b>	<b>Collaborative</b>
Communication planning	No or few meetings. No communications structure with defined points of contact.	One way (transactional) communication. No agreed points of contact. Meetings focus on problems and issues.	Regular meetings and communication structure with clear and consistent points of contact; contact maps documented.	Frequent communication. Points of contact are known and mapped. Meetings focus on short-term actions and long-term planning.	Joint strategic governance focused on communication, relationship, and performance planning. Stakeholder maps define roles and responsibilities.
Information exchange	Secrecy prevails; no sharing of information. Reliant on formal, written communications.	Information provided on request, although often ambiguous and inconclusive.	Information is limited to contractual obligations, where clarification may still be required.	High-quality information (clear, accurate, and timely) is provided in advance of requirements.	High-quality information is available in a shared and open environment.
Problem solving	Blame culture prevails; no acknowledgment of problems.	“Firefighting” culture, focus is on resolution, rather than prevention.	Problems identified early, and recovery plans communicated in advance.	Proactive solutions to emergent and potential problems.	Joint activity to preempt and mitigate any problems.

<sup>3</sup> Derived from British Standard BS 11000-1:2010, *Collaborative Business Relationships — Part 1: A Framework Specification*, A BSI Standards Publication, October 2010. A version of the matrix was published by the United Kingdom, Ministry of Defence, Defense Commercial Directorate, in *A Partnering Handbook for Acquisition Teams*, undated.

**Table 2-2. Partnership Relationship Management Matrix<sup>3</sup>**

	<b>Failing</b>	<b>Reactive</b>	<b>Performing</b>	<b>Cooperative</b>	<b>Collaborative</b>
Responsiveness	No or poor response to inquiries and requests.	Responses to inquiries are reactive and often lack definition.	Responses to inquiries are timely and compliant.	Responds to predicted requirements.	Responses provide suggestions for improvement.
Behavior	Little or no behavior standards.	Recognize different behavior standards.	Behavior demonstrates appreciation of professional and ethical standards.	Behavioral standards agreed upon, managed, and maintained.	Joint behavioral charter deployed.
Strategic alignment	No awareness of each other's business strategies.	Limited awareness of the other party's strategies. No activity to capture benefits or develop opportunities.	Shared awareness of each other's strategies and understanding of the impact on own strategic planning processes.	Some joint, project-specific, strategic planning between parties.	Full visibility, understanding, and alignment of strategies. Impacts are known and jointly managed.
Life cycle capability management	Life cycle not considered.	Recognition of TLM; activities limited to specific project requirements.	Solutions reflect the participation of both parties. Investment to meet development milestones.	TLM concept jointly integrated at the project level.	TLM is jointly embedded within business processes.
Solution developments	Little or no participation in developing solutions.	Little, or late, participation in developing solutions. Requirements modified to fit current products and processes.	Solutions reflect the participation of both parties. Investment to meet development milestones.	Parties engaged at an early stage of solution definition. Investment to improve performance.	Full collaborative participation (multibusiness and cross-functional teams). Investment focused on joint objectives.
Value	Focus solely on cost and price; value is not defined.	Concept of value is recognized and defined.	Value is considered in decision making.	Value added is jointly accomplished. Targets are established.	Sophisticated measurements of value are employed. Targets achieved or exceeded.

## 2.5 Risk Assessment and Mitigation

Relationship management (see Table 2-2 above) is only one consideration that goes into a decision to partner between a public-sector and a private-sector entity. Other factors can be addressed in the arena of risk assessment, and to the extent it is possible, risk mitigation. Some of the assessment factors are established by law or policy; some require careful consideration and negotiation. For the purposes of this discussion, assessment factors have been organized in terms of the three major types of actors that are involved in partnering agreements.

### 2.5.1 ORGANIC PARTNERING ACTIVITIES

Title 10 requirements for organic industrial activities are designed to provide a risk mitigation capability for unforeseen calamities and production requirements that cannot be supported within normal capabilities or by industry for any reason. Mission briefings for most organic activities include accounts of their response to any number of such emergent requirements. By design and statute, the activities maintain built-in capacity to respond to those events.

Organic industrial activities are not self-sufficient in terms of their ability to support emergent work requirements. They depend on the full range of integrated product support elements provided by combinations of external public and private organizations for successful task accomplishment. An assessment of these elements is part of a “supportability” determination the organic depots undertake before inducting new work.

Notwithstanding their outstanding performance history, industry has expressed concern about their ability to hold organic industrial activities accountable, especially when the prospective commercial partner is being contractually required to provide performance guarantees for its work.

Title 10 U.S.C. 2563(c)(3) and 4544(c)(4) partially address these concerns by authorizing designated organic industrial activities to be held accountable for misconduct or gross negligence as well as for cost, schedule, and quality of work requirements. Commercial firms have continued to express concern about the actual procedures that may be used to address any of these accountability factors.

In practice, the organic activities can address some of these concerns with a variety of approaches that can be included in partnering and implementation agreements. Examples include

- use of *tailored* pricing, when feasible, as a means to limit price fluctuations during the performance period caused by external factors;<sup>4</sup>
- establishment of quality assurance procedures to address material defects and premature failure;
- definition of management structures and interchange procedures to address day-to-day production management issues as they arise;

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<sup>4</sup> Tailored pricing is authorized under specified circumstances in DoD Regulation DoD 7000.14-R, Department of Defense Financial Management Regulations (FMRS), Volume IIB, Chapter, 9, Section 090105, “Public-Private Partnerships at Depot Maintenance Activities,” paragraph C.2., June 2010.

- establishment of dispute resolution procedures when issues require senior management resolution;
- confidence-building steps involving open communication, relationship management, and a performance history that delivers what is required on time, on cost, and with specified quality; and
- careful definition of circumstances where a partnership might be placed “on hold” or even terminated in the unlikely event an issue cannot be resolved.

Partnerships create complementary business relationships between two distinct entities, with the relationships marked by mutual cooperation, responsibility, and accountability. Trust between the partners is an essential ingredient for success, and that trust grows over time.

Industry feedback about existing partnerships indicates the question of organic risk is being addressed in ways that are satisfactory to the industry partners.

### *2.5.2 COMMERCIAL PARTNERING ACTIVITIES*

When commercial partners perform their work for a government requiring activity, their work is defined by a government contract, and their performance is overseen by government activities such as the Defense Contract Management Agency. Established contract clauses hold the contractor accountable for required performance.

Over 80 percent of depot maintenance contracting is single-source to the OEM. The combination of oversight clauses and the potential for manufacturer provision of new parts and products makes the commercial side of most partnerships a very low-risk venture for the organic depots.

Commercial partners face similar risks for natural disasters as the organic depots. One reason commercial firms locate their production capabilities at multiple dispersed locations is to mitigate the risk of a disruption at any single site.

At least in part, organic depot maintenance activities can serve as an alternate production facility when commercial sites experience infrequent production disruptions.

### *2.5.3 REQUIRING ACTIVITIES*

There is always a potential that a requiring activity may experience a reduction in available funding or an adjustment in force structure that would lead to a reduced workload. Open and continuous communication between the partners and with the PM is key to assessing and addressing the consequence of these external factors and their impacts on production.

### *2.5.4 OTHER INDUSTRIAL ACTIVITIES*

A range of additional organic industrial activities is engaging in partnering activities. A partial list includes arsenals, ammunition plants, warfare centers, and test and measurement facilities. Depending on the specific legislation authorizing them to sell goods and services, these activities may possess varying degrees of risk mitigation authority.

## 2.6 Keys to Successful Partnerships

A GAO report listed 14 characteristics that partnerships need to achieve success.<sup>5</sup> Table 2-3 presents these characteristics as presented in that report.

**Table 2-3. Characteristics That Partnerships Need to Achieve Success**

Success characteristic	Reason for/benefit of partnership
Long-term relationship and commitment	A long-term relationship and commitment (1) permit both contractors and depots to better plan future workload requirements and create a better business case for the contractor to make investments to improve depot repair capability, and (2) allow the contractor to help manage parts obsolescence.
Shared partnership vision and objectives	Having partners share the same partnership vision and objectives ensures the partners will not be working at cross-purposes.
The right metrics and incentives	The right metrics and incentives are needed to effectively measure that progress is being made and ensure the partners are motivated to achieve partnership goals and objectives.
Early acquisition community involvement	Developing the partnership with acquisition community involvement during the early phases of a weapon system's acquisition helps to ensure any additional depot maintenance capability development that is needed is fully planned and funded.
Complementary skills and abilities	Each partner should bring complementary skills and abilities to the partnership because if each partner's capabilities are the same, the relationship may result in a competitive and potentially adversarial relationship, not the cooperative synergistic relationship hoped for in a partnership.
Senior-level advocacy and support	DoD and contractor senior management support for a partnership is necessary to ensure the effort receives the focus and resources needed to achieve success.
Sound business case analysis	A comprehensive business case analysis, including expected outcomes, should be conducted as part of the decision process for entering a partnership to ensure a sound result benefiting both the depot and the private-sector partners.
Mutual trust and shared risk	The partnership should be firmly grounded in mutual trust, open communications, and balanced risk among partners.
Flexibility to change partnership scope	To ensure the ability to adapt to changing circumstances or factors, the partnerships should have the flexibility to change the partnership scope.
Balanced workload	Workload should be balanced among the partners to ensure meaningful involvement for each partner and ensure one partner does not receive only low-skilled work or no work at all.
Independent review and oversight	Independent review and oversight provides an objective assessment of whether each partnership is achieving the expected benefits and that each partner performs as expected. Such a review also provides a basis for correcting or redirecting partnership efforts if expectations are not being met.
Enforce partnership decisions and requirements	To ensure successful partnering efforts, the partners' senior management must provide a mechanism for enforcing compliance with partnership decisions and requirements.
Full coordination with all stakeholders	Public-private partnership efforts should include steps to get feedback from all stakeholders on planned efforts and adjust the partnering strategies to reflect legitimate concerns of these stakeholders.
Clearly documented objectives in partnering agreement	Once clear mutual partnering objectives are determined, they should be documented into a formal partnering agreement. The documentation can provide for dispute mediation and resolution, and help delineate each partner's liability.

Source: GAO report GAO-03-423, April 2003, p. 14.

<sup>5</sup> Government Accountability Office (previously General Accounting Office), *Depot Maintenance: Public-Private Partnerships Have Increased, but Long-Term Growth and Results are Uncertain*, report GAO-03-423, April 2003, p. 14.

## Section 3. Case Studies

Case studies provide useful illustrations of some of the particular features incorporated into partnering agreements. This section presents seven such case studies, including partnerships from in-service weapon systems, a weapon system in development, an arsenal, DLA, and multi-element product support.

### 3.1 Sniper Pod

#### *WARNER ROBINS AIR LOGISTICS CENTER/LOCKHEED MARTIN*

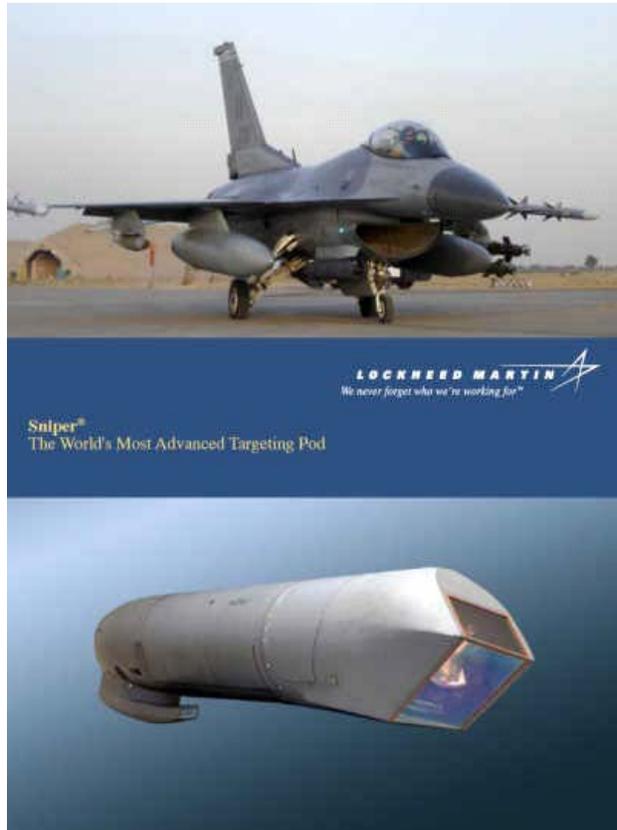
The Sniper Advanced Targeting Pod was competitively awarded on 15 September 2000. The program office solicited early involvement of organic depot personnel and developed the solicitation to include acquisition of all requirements needed for depot activation. The request for proposal's requirements included a total systems support responsibility requirement for the successful offeror, along with provisions for public-private partnerships, where the contractor could utilize the organic depot to perform the core depot-level maintenance, either in a workshare or a direct sales approach.

Sniper Pod incorporates a high-resolution, mid-wave third generation Forward Looking Infrared, dual-mode laser, laser spot tracker, and laser marker; it vastly improves target detection and identification.

The advanced image processing algorithms, combined with the rock-steady stabilization techniques, deliver three times the performance of other systems. Sniper's superior performance includes exceptional stability, long-range identification of tactical targets, and outstanding image processing during supersonic flight. As a precision targeting system in a single, lightweight, affordable pod, Sniper is designed for current and future fighter aircraft.

#### *THE PARTNERSHIP*

The winning contractor, Lockheed Martin, chose a workshare method of utilizing the organic depot and quoted firm pricing for all elements of depot activation (e.g., data, support equipment, parts provisioning, and training). After the contract was signed in September 2000, depot activation began immediately and was completed during the next 3 years. Lockheed and the depot completed the workshare partnership agreement in November 2003, and the depot began performing organic



maintenance in September 2004. These dates fully complied with the requirements of Title 10 U.S.C. 2464 to complete depot activation within 4 years of initial operating capability.

### *PARTNERSHIP SUCCESS*

The organic workload increased from approximately 4,300 direct labor hours in 2004 to an estimated 18,000 hours in 2009.

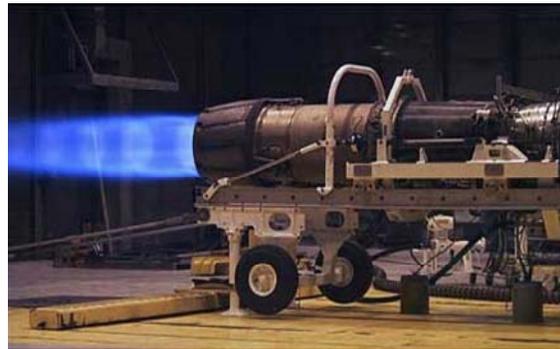
Funding is direct from the program office to the depot for 34 repairable items and the arrangement satisfies both the core and the 50/50 requirements. The depot guarantees both turnaround times and workmanship.

The program office obtained a core designation and source-of-repair approvals before initiating the request for proposal (RFP) for the program. It also involved sustainment personnel from both the system manager and the organic depot early in the acquisition process to help plan an executable sustainment strategy. The purchase order within the RFP included the requirements for depot activation and partnerships that leveraged the program production competition to drive down costs of depot activation so that the competitors selected the most cost-effective partnership strategy: a workshare approach. All stakeholders planned for organic depot maintenance and were able to leverage competitive acquisition to acquire depot activation resources, such as equipment and data rights.

## 3.2 F404 Engine

### *FLEET READINESS CENTER-SOUTHEAST/GENERAL ELECTRIC AIRCRAFT ENGINES*

The General Electric Aircraft Engines (GEAE) F404 is part of a family of afterburning turbofan engines in the 10,500–19,000 lbf (85 kN) class (static thrust). The engine has been used in a variety of Navy, Marine Corps, Air Force, and international aircraft since the early 1980s, and was integrated with the F/A-18 Hornet in the late 1980s. It was designed with a higher priority on reliability than performance. Cost was the main goal in the design of the engine.



#### *THE PARTNERSHIP*

The F404 engine partnership features a public-sector depot labor provision within a PBL arrangement. The partners in the fleet exchange component availability-based project are Fleet Readiness Center Southeast (FRCSE); General Electric Aircraft Engines (GEAE); and Naval Inventory Control Point, Philadelphia. The work occurs within a government-industry teaming arrangement under the authority of 10 U.S.C. 2474. The estimated multiple-year value of the prime contract exceeds \$500 million. The scope of the partnership covers 33 critical gas path aviation reparable components associated with the F404-GE-400/402 engines that power the F/A-18 Hornet. The aim of the PBL program is to provide—and improve—the availability and reliability of the engine's components.



#### FRCSE, Jacksonville, Florida

FRCSE provides all program management supervision, labor, facilities, and equipment for the F404 depot overhaul and repair of components for which the depot is the designated repair point. This support includes management activities from both the depot's production program management office and the business office. These offices ensure timely and economical execution of the responsibilities under a commercial services agreement<sup>1</sup> that is supported by a task description document.

<sup>1</sup> Equivalent to a partnering agreement or CITE agreement used by other Services.

## ***GEAE***

GEAE manages the F404-GE-400/402 component PBL program with assistance from FRCSE. GEAE manages wholesale stock, transportation, and delivery of assets between a central distribution facility and the depot. It also supports efforts to continuously improve industrial operations efficiency at the depot. Additional efforts associated with this program include Lean and Six Sigma training of personnel and a fully engaged team that works closely with the depot's air speed initiatives.

## ***PARTNERSHIP SUCCESS***

An existing business plan for F404 engine management was utilized for best practices and modified based on experience and lessons learned. A proprietary information agreement was established to allow free exchange of information within the partnership, and Lean and Six Sigma processes were used to train personnel. Both FRCSE and GEAE are fully engaged team members that work closely together. Commercial services agreements that were supported by the task description documents ensure timely and economical execution of assigned responsibilities.

## ***PBL ACTIONS***

GEAE worked with FRCSE to improve existing processing by incorporating GE parts matching procedures to increase component life. FRCSE also utilized GE's rotor blade mapping software to reduce vibration-related field rejects and maintenance-induced component damage. Back-orders were reduced when GE made a \$30 million investment in piece parts. GE ended the organic practice of reusing consumable hardware due to parts constraints; 100 percent replacement reduced the possibility of component failures to low-cost consumables beyond their life limits.

### 3.3 M1 Abrams

#### *ANNISTON ARMY DEPOT/GENERAL DYNAMICS LAND SYSTEMS/HONEYWELL*

The M1A1 modernization program increased armor protection; improved suspension and added a nuclear, biological, and chemical protection system that increased survivability in a contaminated environment. The M1A1D modification was an M1A1 with integrated appliqué computer and far-target-designation capability. The M1A2 modernization program includes a commander's independent thermal viewer, an improved commander's weapon station, position navigation equipment, a distributed data and power architecture, an embedded diagnostic system, and improved fire control systems. The M1A2 System Enhancement Program (SEP) adds second-generation thermal sensors and a thermal management system. It also upgrades current processors and memory to enable the M1A2 to use the Army's common command and control software, enabling the rapid transfer of digital situational data and overlays.

#### *THE PARTNERSHIPS*

The Army uses multiple partnerships in support of the M1 Abrams.

*M1A2 upgrade:* In this workshare program, General Dynamics Land Systems (GDLS) has a contract with the PM, while Anniston Army Depot (ANAD) has been assigned a significant amount of the maintenance work.

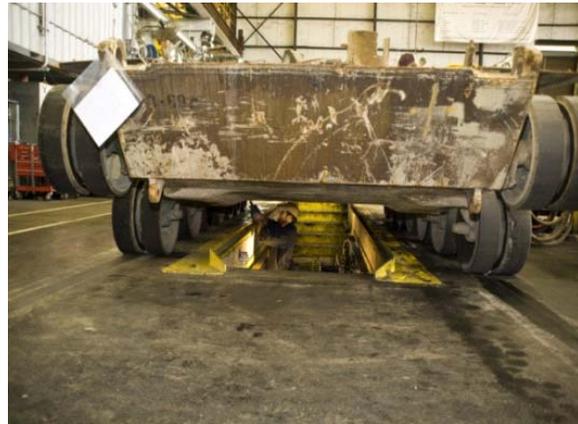
ANAD disassembles the basic M1A2 vehicle and provides hulls and engines refurbished under the Partnership for Reduced Operations and Support Cost, Engine (PROSE) to GDLS. GDLS converts the vehicle to the M1A2 SEP using its vendor base. The M1A2 upgrade revenue through FY2004 was \$227 million to ANAD, with approximately 107 ANAD jobs attributed to the partnership.

*Gunner's primary sight (GPS):* This partnership involves facility usage. ANAD furnishes the facility through an intraservice support agreement (ISSA) with the PM. GDLS manufactures the GPS for the M1A2 SEP in an ANAD-furnished facility. The manufacturing facility will convert to a maintenance facility over time, with the workforce evolving from primarily GDLS employees to ANAD employees.



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*Abrams Integrated Management for 21st Century (AIM XXI):* This partnership involves a rebuild process that functions as a workshare program to support sustainment of the M1A1. First-year production of 45 tanks was completed in June 2000, and production continued at a rate of 125 tanks per year. ANAD disassembles the vehicles and overhauls their structure and components, while GDLS provides material to ANAD's overhaul process, and assembles and tests the vehicles. This partnership has generated \$567 million in revenue for ANAD (though FY2010) and supports 214 jobs at the depot. The AIM XXI partnership leverages the organic capability to overhaul components with GDLS's expertise in vehicle assembly.

*Recuperator:* This partnership arrangement is a direct sales and facility use in which ANAD furnishes the facility through a contract with Honeywell. The recuperator is a heat exchanger for the Abrams tank that warms inlet air for the engine. Honeywell manufactures plates for recuperators to support the AGT1500 engine production at ANAD. The depot also provides distribution and base operating and support services. On-site production eliminates the need for a parts manager at ANAD, and removes the requirement for the Defense Logistics Agency to stock and issue recuperators. This arrangement also minimizes the need for raw material and finished goods inventory.

*PROSE:* This partnership, now known as the Total Integrated Engine Revitalization program, is an engine upgrade program. ANAD provides a maintenance facility through an ISSA with the PM, while Honeywell provides parts and engineering services to support the AGT1500 engine production at ANAD. The partnership uses Lean and Six Sigma tools to develop a performance-oriented agreement with Honeywell that includes such objectives as improvement in material support to the ANAD overhaul line. This improvement could eliminate schedule deviations caused by the unavailability of parts.

*M1A2 SEP Retrofit:* This partnership is a workshare program. Under this partnership, ANAD disassembles the vehicle and overhauls structures and components. GDLS provides new components and overhaul of SEP-unique items. GDLS also provides material to ANAD's overhaul process and assembles and tests the vehicles.

### ***PARTNERSHIP PROGRAMS***

ANAD employs six different partnership programs to support depot work on the M1 Abrams. The partnerships include examples of workshare agreements, facility usage and direct sales agreements, MOAs, and ISSAs. In addition, the U.S. Army Tank-automotive and Armaments Life-Cycle Management Command (TACOM LCMC) worked directly with the PMs from both General Dynamics and Honeywell to manage and finance each partnership program.

### ***PARTNERSHIP BENEFITS***

A notable amount of responsive product support is evident in the form of more reliable tanks for the soldiers that are less costly to operate. Similarly, improved business processes have been introduced that leverage the best options from the public and private partners. Facility utilization has improved and operating and support costs have been reduced as a result of these partnerships.

### 3.4 F-35 Lightning II Fighter

#### *USAF/USN/USMC/LOCKHEED MARTIN/PRATT & WHITNEY*

Understanding the evolution of future DoD weapon system acquisitions can help us navigate the landscape of future sustainment requirements and opportunities. Conglomerate supplier partnerships, joint system usage, and application of breakthrough technologies all impact the realm of potential sustainment solutions and should be considered as forward looking benchmarks in our pursuit of best value. One of the acquisitions to watch is the F-35 Joint Strike Fighter.

The Joint Strike Fighter (JSF) Program has initiated a partnering approach that supports both Military Department core capability decisions (under 10 U.S.C. 2464) and the integration of the JSF Program Office (JSFPO)/private partner sustainment activities through public-private partnering under a performance-based logistics concept. The key instrument in implementation of this approach is a partnering agreement (PA) that is universal in its enterprise scope, and comprehensive in its functional detail.

In 1994, the Under Secretary of Defense (Acquisition, Technology and Logistics) formally established the Joint Advanced Strike Technology (JAST) Program, providing a comprehensive, advanced technology effort to prepare the way for the next generation of strike weapon systems. From its inception, the program philosophy has been “to do business differently” and to demonstrate leadership from acquisition to sustainment.

The JAST Program has grown into the JSF Program, and is DoD’s focal point for defining affordable next generation strike aircraft weapon systems for the Navy, Air Force, Marine Corps, and eight cooperative international partners. The focus of the program is affordability—reducing the development cost, production cost, and cost of ownership of the JSF family of aircraft—while providing state-of-the-art lethality, survivability, and supportability. The JSF will fulfill stated service needs as follows:

- U. S. Navy first day of war, survivable strike fighter aircraft to complement F/A-18E/F



- U.S. Air Force multirole aircraft (primary-air-to-ground) to replace the F-16 and A-10 and complement the F/A-22
- U.S. Marine Corps short takeoff–vertical landing (STOVL) aircraft to replace the AV-8B and F/A-18 as their only strike fighter
- Other potential foreign military sales (FMS) customers from allied countries include current operators of F-16, F/A-18, and AV-8B.

A collaborative team with participants from the JSFPO, its product support integrator (PSI) (Lockheed Martin) and its propulsion system contractor (PSC) (Pratt & Whitney), and several subcontracted suppliers and customer representatives from the U.S. Air Force and U.S. Navy have set the conditions of partnerships. Their approach, based on the U.S. Air Force documentation model, was to first develop a PA to normalize the terms and conditions for the numerous partnerships between the U.S. government depots and the dozens of suppliers who would deliver maintenance services through public-private partnerships. Key objectives outlined within this PA were developed to benefit both suppliers and customers:

- Integrate the parties' strengths to provide best-value solutions.
- Establish a framework for long term association.
- Establish appropriate risk-reward relationships; and clear lines of accountability, responsibility and authority.

Having established an overarching PA, the team designed an implementation agreement (IA) template. The IA standardized elements necessary to comply with the PBL requirement while facilitating flexibility to pursue best value in ways that may be unique to the subsystem, supplier, or individual depot. Given the PA and IA templates, the PSI/PSC supplier and the depot will then be afforded the flexibility to populate the IA template with a broad range of variable elements based on their negotiated agreement, provided they comply with the terms and conditions that flow down from the PBL through the PA. As this model proves out through execution in the coming years, it will be viewed as a potential DoD standard for future partnerships to simplify the process, normalize the conventions, and expedite speed to market as added benefits.

In prospect, there are 48 system/subsystem depot source of repair (DSOR) assignments at six organic military service depots (MSDs), each with one MSD and one original equipment manufacturer, plus the PSI and PSC. The total number of partnerships to be negotiated between these actors is under development as a set of individual implementation agreements under the partnering agreement.

Prior to the start of system design and development (SDD) in the fall of 2001, the program facilitated the services' development of fully validated, affordable operational requirements, and it lowered risk by investing in and demonstrating key leveraging technologies and operational concepts.

The JSFPO will develop, deploy and sustain a three-variant family of highly common and affordable strike fighter aircraft to meet the operational needs of each of its customers. The JSF is designed to be a fifth generation, single-seat, single-engine stealth multirole fighter that can perform close air support, tactical bombing, and defense missions.

### *A STANDARD FOR PARTNERING*

The team responsible for developing the PA for the JSF hoped to develop an end-product that would serve as a template for developing future weapon system partnering agreements.

### *THE PARTNERSHIP*

The partnership has many goals, including translating warfighter requirements, JSF program requirements, acquisition strategy, and DoD objectives into expectations and behaviors for each partner. In addition, partners wanted to integrate contractor and organic strengths to provide best-value solutions; establish a framework for implementation agreements; and create a structure to support long-term association of the PA parties, identify risk-reward relationships, and distinguish clear lines of accountability, responsibility, and authority.

The JSF PA cites the following requirements:

- Support basic tenets by defining roles, responsibilities, expectations, and behaviors as identified and agreed upon.
- Identify top-level metrics to assess performance against partnership requirements.
- Facilitate contract development, implementation, and execution.
- Establish framework for implementation agreements.
- Include PSI (Lockheed Martin) and PSC (Pratt & Whitney).
- Be consistent with established JSF sustainment management strategy (SMS).
- Commit to cooperation and mutual support.
- Endure beyond the period of performance of the contract; develop a new standard in partnering.
- Exclude workload-unique expectations (which are to be included in IAs ).

The basic partnership between Lockheed, Pratt & Whitney, and the MSDs is in place, awaiting final approval of depot source-of-repair decisions. Additional partnering activities and IAs are in development.

### 3.5 Rock Island Arsenal/BAE Systems

#### *ROCK ISLAND ARSENAL COMPOSITE ARMOR CENTER*

Rock Island Arsenal (RIA) entered a partnership with BAE in August 2009 to establish an organic composite armor production capability. The partnership utilizes BAE's strength in the development and production of composite panels with the skilled workforce and capital equipment at RIA. The project is an Arsenal Support Program Initiative (ASPI).<sup>2</sup> It is located in some of the excess warehouse space at RIA. Renovations to the space provided the environment needed to prepare and consolidate the panels in a very effective and desirable work space.



#### *THE PARTNERSHIP*

BAE has brought spall liners for the Suburban Hard Car and mine-resistant, ambush-protected (MRAP) spares. RIA has attached test panels from the U.S. Army Tank and Automotive Research, Development and Engineering Center (TARDEC) and spall liners from RIA ongoing programs for various customers. Synergies are developing with the RIA sewing department utilizing some of the panel preparation equipment for many pliable material programs. This approach allows RIA to more efficiently precut material for sewing, therefore streamlining their processes.

#### *PARTNERSHIP BENEFITS*

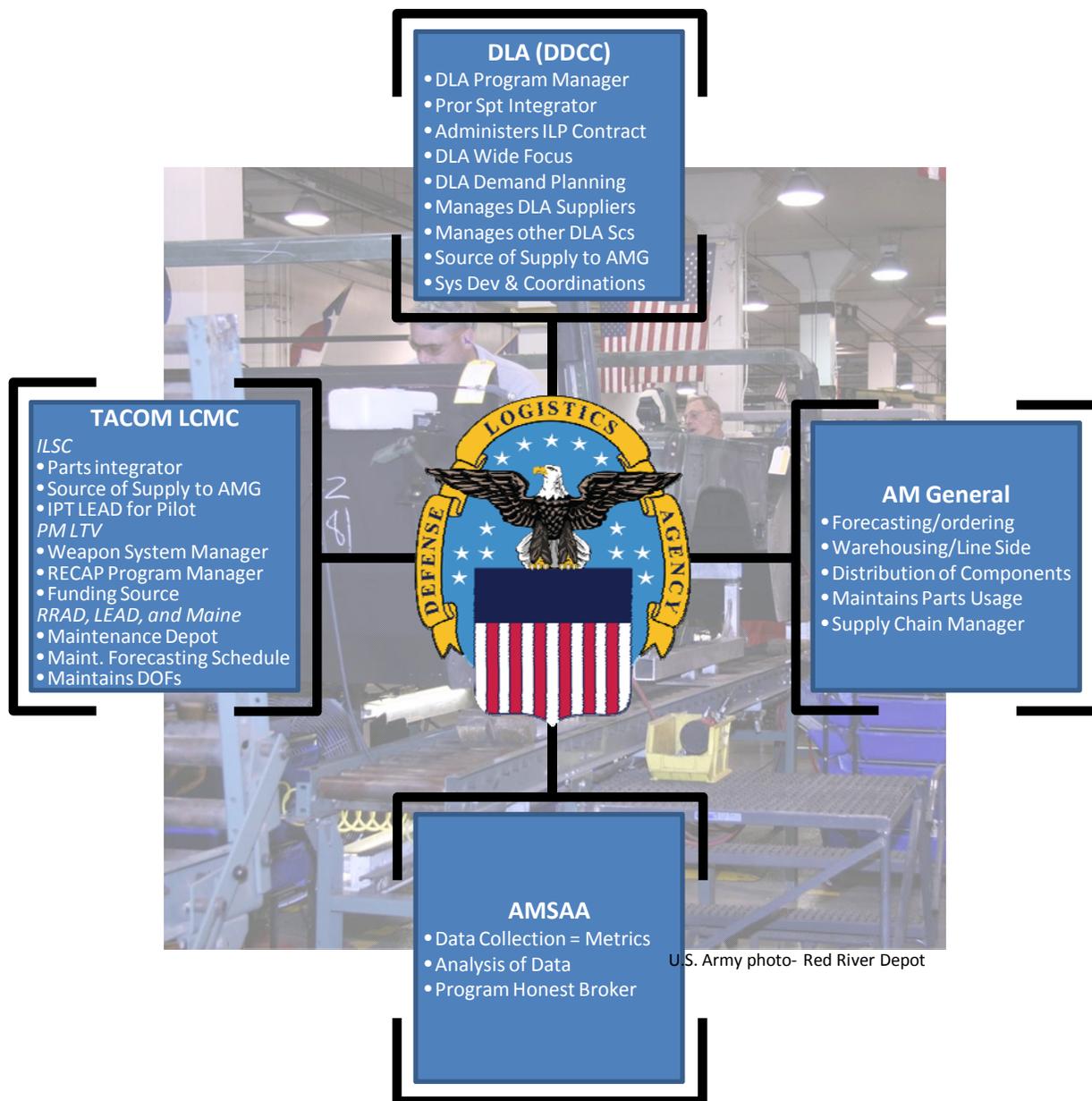
The RIA partnership with BAE Systems is bringing new work with expanded capability, retaining skills in the fabrication and pliable material disciplines, and providing a valuable service to customers and the warfighter. RIA is actively working to make the capability known to potential customers, including the U.S. Army Tank-Automotive and Armaments Life Cycle Management Command (TACOM LCMC), other Army Materiel Command organizations, and Joint Services decision makers with composite armor requirements.

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<sup>2</sup> Authorized by the *National Defense Authorization Act for Fiscal Year 2001*, Section 343, "The Arsenal Support Program Initiative," as amended.

### 3.6 Integrated Logistics Partnership—High Mobility Multi-Purpose Wheeled Vehicle™

DEFENSE LOGISTICS AGENCY/U.S. ARMY TANK-AUTOMOTIVE AND ARMAMENTS LIFE CYCLE MANAGEMENT COMMAND/ARMY MATERIEL SYSTEMS ANALYSIS ACTIVITY/AM GENERAL



## BACKGROUND

The High Mobility Multi-Purpose Wheeled Vehicle (HMMWV) is a multipurpose light tactical vehicle employed by all of the military services in areas of the modern battlefield. It is supported using the current logistics and maintenance structure established for Army wheeled vehicles. The HMMWV is produced in several configurations to support weapon systems; command and control systems; field ambulances; and ammunition, troop, and general cargo transport.

Recapitalization (RECAP) is an Army program that receives HMMWVs from the field units, disassembles, and replaces targeted parts and components, remanufactures others, and rebuilds the vehicle to an updated configuration. At that point the vehicle is at zero miles, zero hours, and is a “like new” condition platform ready to issue for tactical formations. These rebuilt HMMWVs are critical to our warfighter’s execution of the contingency operations, and were used extensively in Operation Enduring Freedom and Operation Iraqi Freedom.

## SITUATION

On January 15, 2004, at the Joint Logistics Board, the Under Secretary Defense for Acquisition, Technology and Logistics (USD [AT&L]) asked “What is doable, pilotable, and practical [in regards to] optimizing the supply chain by having DoD pay for material when delivered to the end user [by moving] the point of inspection and point of sale to point of use.” The Executive Deputy to the Army Material Command (AMC) Commanding General offered “to develop the concept and conduct a pilot at an AMC depot.” This would make supply chain management at the production line a vendor responsibility and allow for minimal handling by government personnel. It would also facilitate inventory reductions in a controlled, defined, and measurable manner.

Due to significant support problems experienced in 2004 and 2005 on the HMMWV line, AMC selected the HMMWV RECAP Program. In 2004 and 2005, the Army had ordered or stockpiled \$109.9 million in U.S. Army TACOM and Defense Logistics Agency (DLA) parts to support the HMMWV RECAP maintenance lines at Red River Army Depot (RRA) and Letterkenny Army Depot (LEAD). The stockpiling effort was to support RECAP for 4,500 HMMWVs. Despite this effort, nearly every HMMWV came off the production line *unfinished*, missing as many as 15 or more parts.



This photograph represents approximately \$35M of the 1,378 unfinished vehicles from late 2005.

The unfinished vehicles had to be stored until parts could be added later. This resulted in additional labor hours to bring the vehicles back into the maintenance facility, install the missing parts, and at times replace additional parts due to degradation during storage (seals, hoses, etc). In late 2005 nearly 1,400 unfinished HMMWVs were in storage at one time. The Army had \$70 million in *unfinished* vehicles that could not be returned to Army units for operational missions.

## *THE SOLUTION*

The OSD (AT&L) requirement, the AMC selection decisions process, and the pervasive 2005 support problems on the HMMWV lines culminated in the establishment of a DLA/TACOM Integrated Logistics Partnership (ILP) Team. The team's mission is to make dramatic improvements to support the HMMWV RECAP lines under the new OSD(AT&L) principles and to prevent the situation of unfinished vehicles from occurring again.

The Army orders consumable parts from DLA. DLA is responsible for sourcing and providing nearly every consumable item used by our military forces worldwide, and procuring new Service-managed depot-level repairables. TACOM contracts for repairable items. AM General is the manufacturer of HMMWVs and has produced over 200,000 vehicles for the Army, Air Force, Navy and international governments since it received its original U.S. government contract in 1983.

The OSD(AT&L) requirement is to focus on optimizing supply chain performance through implementation of best business practices and innovative supply chain solutions focused on improving support to production processes:

1. Customers pay for goods and material only once it is delivered to the end user.
2. The point of inspection and sale is moved to the point of use (production line).

Defense Supply Center Columbus (DSCC) awarded a performance-based technical, logistics, and repair parts support contract to AM General on 1 November 2005. On 17 January 2006, the contract was implemented at Letterkenny Army Depot (LEAD) and Red River Army Depot (RRAD) and later expanded to a third industrial location at Maine Military Authority (MMA). ILP is an example of a true public-private partnership across the Army, DLA, and AM General.

The ILP performance-based logistics contract integrates supply support; maintenance planning; packaging, handling, storage, and transportation (PHS&T); and integrated logistics elements to improve overall material availability, mission success, and reduce the total ownership cost through support to the HMMWV RECAP program.

Under the ILP, the vendor manages, owns, stores, and delivers inventory to the customer point of use (depot shop floor) as needed. The billing and payment process is postponed until the time of use by the customer.

## *ROLES AND RESPONSIBILITIES:*

- *Defense Supply Center Columbus (DSCC)* serves as the DLA program manager for the ILP, executes the contract award, administers the contract, functions as the parts integrator, and serves as a product support provider to AM General, RRAD, LEAD, and MMA. DSCC is DLA's supply chain owner for land and maritime items.
- *TACOM* serves as the weapon system program manager, the centralized e-business manager, the funding source, the IPT lead, and a PSP to AM General.

- *AM General* is responsible for the identification of quality issues, requirements forecasting, supply chain inventory management, distribution of individual components to the maintenance lines, construction of kits for workstations, unpacking and prepositioning of parts, disposal of all packaging, just-in-time delivery of components whenever possible, and the ordering of components from the DoD supply system.
- The industrial (*RRAD, LEAD, and MMA*) depots rebuild the HMMWVs into the zero mile “like new” M1097R1 HMMWV configuration.

### *PERFORMANCE-BASED AGREEMENT*

The PBA established between TACOM and DLA delineates the roles, responsibilities, performance expectations, and accountabilities of each stakeholder.

The performance metrics are tracked by RRAD, LEAD, TACOM, DLA, and the Army Material Support Analysis Activity (AMSAA). The PBL HMMWV Program metrics are as follows:

- *Cost per vehicle*—total cost to produce a RECAP HMMWV depot maintenance program and HMMWV RECAP program
- *Data*—total dollar value and the total materiel value for both the depot maintenance program and the HMMWV RECAP program
- *Stock out rates*—number of provider parts not available at the designated delivery points when needed divided by the number of provider parts consumed during the evaluation period
- *Quality defects*—number of stock-outs on the line caused by non-conforming provider parts.

### *PARTNERSHIP SUCCESS*

The ILP business processes enhances both the forecasting and supply support efforts. It eliminates costly support issues that involve expensive emergency purchases by the depots, DLA, or the Army and the costly process of emergency fabrication by the depots to support the production lines. It also eliminates the disruptions to the production line that lead to the generation of incomplete HMMWVs, which results in expensive shutdowns along the line. Since inception of the ILP, the stock-out rate at the depots has decreased dramatically. LEAD has not experienced a stock-out in 320 production days, RRAD in 280 production days, and MMA in 241 days. As a result of the ILP initiative, materiel availability is holding at 99.99 percent, and over 23.8 million spare parts were provided to rebuild over 30,000 HMMWVs at an inventory cost savings of over \$86 million which is a 76 percent reduction in the pre-ILP Army Inventory. According to the RECAP PM, inventory investment decreased by 95 percent. Most significant is the reduction in the RECAP cost per vehicle (\$4,520 for RRAD and \$3,414 for LEAD) and the protection of the nation’s small business interest. The partnership caused a reduction in required parts inventories to \$22.9 million by concentrating on a refined bill of materials (BOM) for more than 1,200 required items.

The ILP program is now the staple for HMMWV program industrial support, and its concept and practices can be exported to additional Army weapon systems and throughout DoD and other industrial programs for additional savings and improved performance, while still taking advantage of America's small business capabilities and partners.



## **Section 4. Partnering Resources**

### **4.1 General Information About Partnerships**

There is an extensive amount of reference material about public-private partnerships available online.

### **4.2 Defense Acquisition University Acquisition Community Connection**

Site of the eight sustainment guides mentioned at the beginning of this guide, and their cross-linkages: <https://acc.dau.mil/guidebooks>.

### **4.3 OSD Maintenance Web Site**

For materials specific to depot maintenance partnering, consult the OSD Maintenance Web site at <http://www.acq.osd.mil/log/mpp/partnering.html>. That site also provides access to the following:

- Links to technical reports and brochures about partnering
- A “Partnership Practitioners’ Toolbox” that contains examples of good ideas from successful partnering applications
- Links to the partnering sites of the military services
- Links to partnering database reports, many of which are updated periodically
- Links to downloadable copies of standardized formats for partnering agreements and implementation agreements.

### **4.4 Standardized Partnering Documents**

A Joint Service working group has developed standardized formats for partnering agreements and implementation agreements. The formats are available in the Partnership Practitioners’ Toolbox (see above) in either the HTML version that will appear on screen or as links to downloadable Word documents. They are also embedded attachments to this guide, see below.

### **4.5 Uniform Commercial Code**

Cornell University’s free version of the Uniform Commercial Code can be found at <http://www.law.cornell.edu/ucc/ucc.table.html>. It contains useful formats for business operations.

### **4.6 Partnership Practitioners’ Forum**

OSD Maintenance is reviving its successful series of Partnership Practitioners’ Forums. The forums will occur in two formats. The first format will be held in conjunction with the DoD Maintenance Symposium and will be open to all interested industry and government participants. The second format will be sponsored by industry associations. For further information about the DoD Maintenance Symposium, go to the SAE International Website at <http://www.sae.org/events/dod/>. Industry events will be announced separately.

Information about all upcoming forums will be posted on the OSD Maintenance Website.

#### **4.7 Further Information, Comments, Questions**

Send an e-mail to [partnering@osd.mil](mailto:partnering@osd.mil).

## Appendix Abbreviations

ACC	Acquisition Community Connection
AIM XXI	Abrams Integrated Management for 21st Century
AMC	Army Material Command
AMSAA	Army Material Support Analysis Activity
ANAD	Anniston Army Depot
ASPI	Arsenal Support Program Initiative
AT&L	Acquisition, Technology & Logistics
BOM	bill of materials
BSI	British Standards Institution
CITE	Centers of Industrial and Technical Excellence
CRADA	Cooperative Research and Development Agreement
DCMA	Defense Contract Management Agency
DLA	Defense Logistics Agency
DMSMS	Diminishing Manufacturing Sources and Material Shortages
DoD	Department of Defense
DSCC	Defense Supply Center Columbus
DSOR	depot source of repair
FAR	Federal Acquisition Regulation
FMS	Foreign Military Sales
FRCSE	Fleet Readiness Center Southeast
FY	fiscal year
GAO	Government Accountability Office
GDLS	General Dynamics Land Systems
GEAE	General Electric Aircraft Engines
GPS	Gunner's primary sight
HMMWV	High Mobility Multi-Purpose Wheeled Vehicle
IA	Implementation Agreement
ILP	Integrated Logistics Partnership
ILS	Integrated Logistics Support
IPT	integrated process team
ISSA	intraservice support agreement

IUID	Item Unique Identification
JAST	Joint Advanced Strike Technology
JSF	Joint Strike Fighter
JSFPO	JSF Program Office
LCMC	life cycle management command
LEAD	Letterkenny Army Depot
LRIP	low rate initial production
MMA	Maine Military Authority
MOA	memorandum of agreement
MRAP	mine-resistant, ambush-protected
O&S	Operation and Support
OEF	Operation Enduring Freedom
OEM	original equipment manufacturer
OIF	Operation Iraqi Freedom
OMB	Office of Management and Budget
OSD	Office of the Secretary of Defense
PA	Partnering Agreement
PBA	performance-based agreement
PBL	performance-based logistics or performance-based life cycle product support
PHS&T	Packaging, Handling, Storage, and Transportation
PMs	program or product managers
PPPs	public-private partnerships
PROSE	Partnership for Reduced Operations and Support Cost, Engine
PSI	product support integrator
PSM	product support manager
PSP	product support provider
RECAP	Recapitalization
RFP	request for proposal
RIA	Rock Island Arsenal
RRAD	Red River Army Depot
SDD	System Design and Development
SEP	System Enhancement Program

STOVL	short takeoff–vertical landing
TACOM	Tank-automotive & Armaments Command
TACOM LCMC	Tank-automotive and Armaments Life Cycle Management Command
TARDEC	Tank and Automotive Research, Development and Engineering Center
TLCM	Total Life Cycle Management
US	United States
USAF	United States Air Force
USD	Under Secretary of Defense
USD AT&L	Under Secretary Defense for Acquisition, Technology and Logistics
USMC	United States Marine Corp
USN	United States Navy





### Further Information Contact

Suggestions for improving this handbook and DoD's partnering program are welcome. We also welcome questions about the program and problem descriptions. If you want to communicate with the OSD Maintenance staff, please send an e-mail to [partnering@osd.mil](mailto:partnering@osd.mil), or address correspondence to

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