SD-19

Parts Management Guide

DEFENSE STANDARDIZATION PROGRAM OFFICE

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Foreword

Today's defense acquisition environment is characterized by rapidly changing designs and technologies and by increased risks in weapon system performance and support due to issues with parts. In this environment, the need for defense contractors to have an effective parts management program is greater than ever before. This publication provides government and industry managers a pragmatic approach toward parts management to enhance weapon systems operational and logistics readiness and to reduce the logistics footprint and total ownership cost. The guidance in this document, when used in conjunction with MIL-STD-3018, "Parts Management," will help ensure successful parts management to support current acquisition strategy. It may also be used as a tool for evaluating a contractor's parts management performance.

This document is intended to be used by defense contractors and acquisition activities. In particular, this document offers guidance to individuals who are defining parts management needs in contracts; establishing a parts management process for prime contractors, subcontractors, and suppliers; and looking for an efficient and manageable part selection process. Additional guidance can be found in the Defense Acquisition Guidebook at https://akss.dau.mil/dag, Section 4.4.12, Parts Management.

We are extremely grateful to the numerous government and industry individuals on the Parts Standardization and Management Committee (PSMC) who contributed the guidance information. The PSMC is a DSPO-chartered government and industry forum that influences and supports parts management and standardization. Further information on this group can be found on the PSMC website at http://www.dscc.dla.mil/programs/psmc.

Recommended changes to this publication should be sent to the Defense Standardization Program Office, 8725 John J. Kingman Road, Stop 5100, Fort Belvoir, VA 22060.

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CHAPTER 1

Parts Management Overview

In today's acquisition environment—characterized by rapidly changing designs, increased risk for Department of Defense (DoD) weapon systems and equipment acquisition contracts due to an increase in the use of commercial part types, offshore manufacture of parts, and Diminishing Manufacturing Sources and Material Shortages (DMSMS)—the need for contractors to have an effective Parts Management Program (PMP) is greater than ever before. The PMP is an integral part of the acquisition process for design, development, modification, and support of weapon systems and equipment.

Parts management focuses on selecting the best parts at the design phase of an acquisition program under an overarching systems engineering umbrella. Typically, the use of parts described by non-government standards (NGSs) or military standards or the use of commonly used parts already in the DoD supply system is preferred. Use of these types of parts provides the ultimate user, the warfighter, returns that can be measured through the desired performance-based criteria of operational availability, operational reliability, cost per unit usage, logistics footprint, and logistics response time, as well as payback in terms of total ownership costs.

Parts Management Program

Selecting, specifying, ensuring proper design applications, and, in general, managing parts used in complex systems constitute a major engineering task. Parts are the building blocks from which systems are created and, as such, greatly impact hardware dependability and readiness. Since the reliability and maintainability of the end item is dependent upon these building blocks, the importance of selecting and applying the most effective PMP cannot be overemphasized.

Parts management is the practice of considering the application, standardization, technology (new and aging), system reliability, maintainability, supportability, and cost in selecting parts and addressing availability, logistics support, DMSMS, and legacy issues in supporting them throughout the life of the systems.

As part of the engineering process, parts management is an integrated effort to streamline the selection of preferred or commonly used parts during the design of weapons systems and equipment. This process determines the optimum parts while considering all the factors that may affect program outcomes.

Parts Selection

The most crucial element of parts management is part selection. Proper part selection requires that myriad factors be considered when choosing the optimum part, including technical characteristics, reliability, life-cycle cost, commonality, performance history, vendor performance, qualification, potential obsolescence, standardization, manufacturing, and maintenance:

- *Reliability.* Assuring that the parts selected meet contractual requirements and proper design application is critical to ensuring that the reliability requirements of the weapon systems or equipment acquisition contracts are met. A part that is acceptable for an environmentally controlled ground site may not be acceptable for use in an aircraft that subjects the part to different environments and stresses. Part types used in land-based aircraft may not be suitable for use in ship-based aircraft that operate in severe marine environments and are more susceptible to corrosion. Legacy issues are critically important when selecting parts for design use. If "lessons learned" are addressed in the part selection process, fewer parts with built-in failure mechanisms will be used, resulting in enhanced reliability and system safety.
- *Standardization.* Reducing the proliferation of part types used in design through standardization is also important for enhancing material readiness and interoperability and for reducing total ownership costs. Selecting standard or commonly used parts ensures that reliable and documented part types that reduce design risks are used. Use of standard or commonly used parts within and across DoD weapon systems and equipment enhances inter- or intra-departmental part commonality and interchangeability; reduces the variety of parts in the inventory; enhances part availability, reliability, maintainability, and economies of scale; and reduces part obsolescence occurrences.
- *DMSMS.* Each part selected for design use must be assessed for availability and evaluated based on its projected life cycle to mitigate the effects of DMSMS and minimize the impact on the system equipment production schedule. Parts selected and used in design should be tracked for DMSMS issues throughout the system or equipment life cycle to ensure availability of parts and to provide sufficient lead-time to develop the best solutions to mitigate parts issues in order to sustain fielded systems and reduce life-cycle costs. The Government-Industry Data Exchange Program (GIDEP) and many commercial part-tracking databases are available to provide information concerning when a part is discontinued by its manufacturer. SD-22, *Diminishing Manufacturing Sources and Material Shortages: A Guidebook of Best Practices and Tools for Implementing a DMSMS Management Program*, provides information on DMSMS and suggestions on how to address DMSMS issues.

- *Part and supplier quality.* An important requirement for selecting parts is considering the source of supply and whether the parts are qualified for the application in which they are to be used. Part manufacturers and part distributors who provide the selected part must be required to follow documented and established quality assurance policies and procedures. Those policies and procedures should include, but not be limited to, statistical process control data and process controls on manufacturing, material, shipment, storage, notification concerning process changes, customer satisfaction, and quality measurement systems.

In view of the above, it is easy to understand why a disciplined part selection process in the design phase, as part of a formal PMP, increases the probability of using the most optimum parts in DoD weapon systems and equipment. Use of such parts can enhance reliability, maintainability, economies of scale, and supportability. In turn, these factors will enhance systems performance, logistics and operational readiness, and interoperability, while decreasing the logistics footprint and the total ownership costs of weapon systems and equipment.

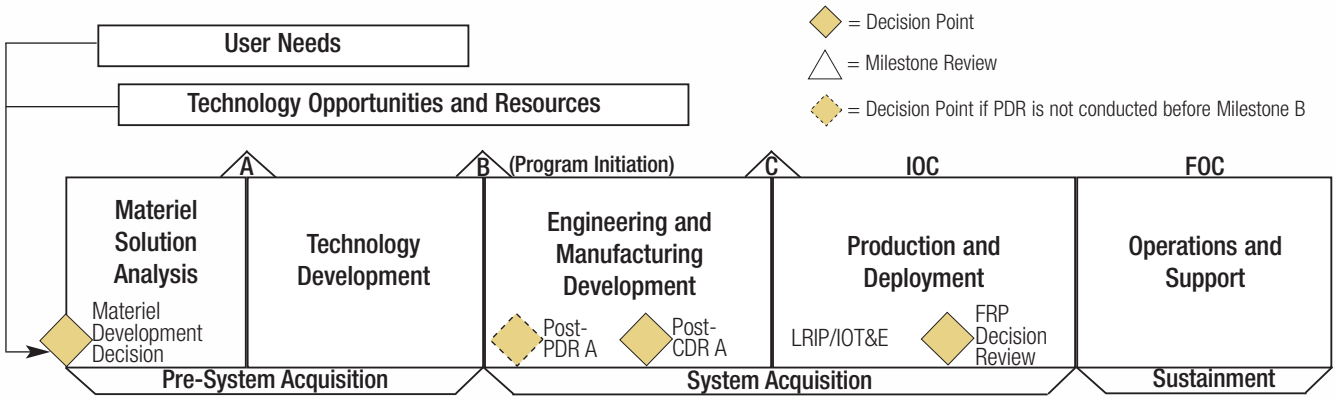
CHAPTER 2

Parts Management in the Defense Acquisition System

Timing for Implementation of Parts Management Requirements

Figure 1 depicts the Defense Acquisition Management System. It also depicts the flow from phase to phase. As the figure shows, the Materiel Development Decision must be made before the first phase can begin. In addition, certain phase-specific criteria must be met before entering each subsequent phase. The acquisition may be evolutionary, or it may be a single step to full capability.

Figure 1. The Defense Acquisition Management System



Source: DoD Instruction 5000.02, "Operation of the Defense Acquisition System," December 2008, p. 12.
Notes: CDR = critical design review, FOC = full operational capability, FRP = full-rate production, IOC = initial operational capability, IOT&E = initial operational test and evaluation, LRIP = low-rate initial production, PDR = preliminary design review.

Parts management should be considered, addressed, and implemented under the five-phase Defense Acquisition Management System as follows:

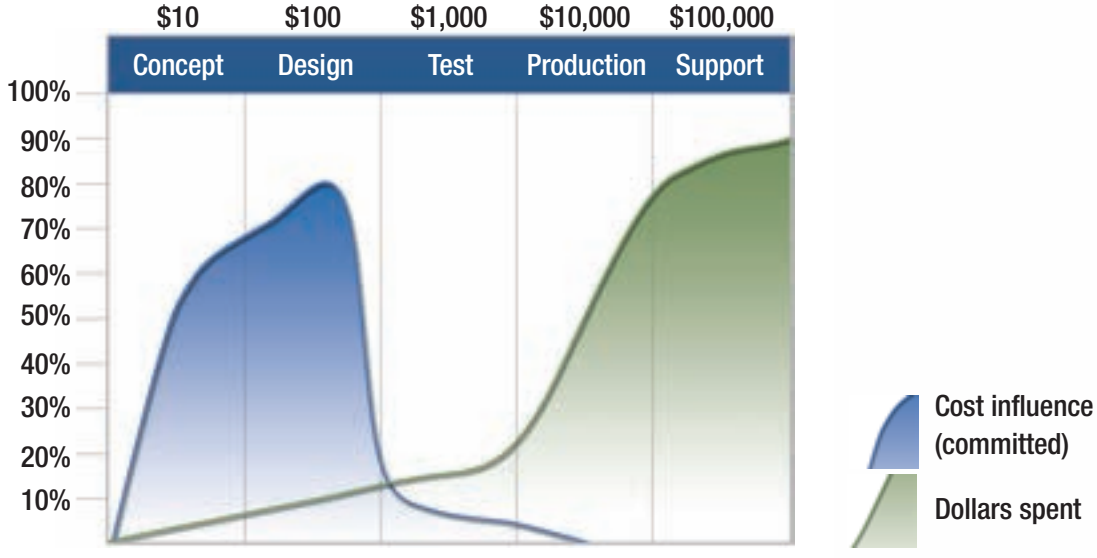
- *Materiel solution analysis phase.* Parts management will be an output of the supportability concept to the extent that it is considered in the analysis of alternatives.
- *Technology development phase (Milestone A).* Although parts management requirements for prototypes are not anticipated, all of the initial determinations and collaborations between the acquisition activity and the contractors concerning the parts management requirements for the production system should be completed before the next milestone. The contractor should determine the baseline part types to be used. All requirements should be called out in the contract statement of work (SOW) for the engineering and manufacturing development phase.

- *Engineering and manufacturing development phase (Milestone B).* Parts management requirements should be implemented under an approved parts management plan. During this phase, requirements should be flowed down to subcontractors, and the contractor should review their processes for approval. As subcontractors come "on line," they should implement their approved parts management process. (In terms of practical implementation, this may take some time. Interim procedures may be needed during the process of plan approval since subcontractors will continue to iterate design and select parts.)
- *Production and deployment phase (Milestone C).* Parts management is required for changes or modification to the baseline design or parts obsolescence issues.
- *Operations and support phase.* Parts management is required for changes or modification to the baseline design or parts obsolescence issues.

Design Process

Applying parts management during the design process is a critical step in a successful PMP. Figure 2 depicts the spending profile and the commitment of funds for a typical acquisition program. As the graph indicates, although expenditures are relatively small in the early phases of a program, decisions about the system requirements and the design approach to meeting those requirements have a major impact on the program costs in the outyears. Therefore, designing an effective parts management plan early in the program can have a significant impact on the lifecycle cost of the program.

Figure 2. Spending Profile for a Typical Acquisition Program



Parts Management Responsibilities during the DoD Acquisition and Sustainment Process

Both the acquisition activity and the contractor have responsibilities to ensure that the PMP meets contractual requirements and its goals and objectives:

- *Acquisition activity responsibilities.* Acquisition activity systems engineers—or their designated PMP managers, integrated product team (IPT) members, or other individuals responsible for parts management—are responsible for determining and tailoring all initial parts management requirements, coordinating and negotiating those requirements with the contractor, and evaluating and approving the required contractor-submitted plans or processes. They are also responsible for ensuring that contractually approved plans are implemented and meet PMP objectives, as listed in MIL-STD-3018, "Parts Management," during the engineering and manufacturing development, production and deployment, and operations and support phases. Parts management should be discussed during the systems engineering technical reviews. The responsible individuals may also request technical interchange or parts management IPT meetings to address and resolve any part-type issues and generally to interact or team with their industry counterparts to ensure that requirements are met. They are also responsible for approving any contractor-initiated changes to the plan. Program managers can find additional guidance on parts management in the Defense Acquisition Guidebook.
- *Contractor responsibilities.* The contractor's designated PMP manager is responsible for teaming with the acquisition activity to implement PMP contract requirements. Part selection and application are the responsibility of the contractor whose primary requirement is to meet the performance objectives of the system or equipment. The contractor's designated PMP manager is responsible for approving all selected parts and for ensuring that the contractor's parts management processes meet their intended objectives. The designated individual is also responsible for managing subcontractors' participation concerning contractual requirements, as well as all other aspects of the contractor's contractually approved processes. It is the contractor's responsibility to interact or team with the acquisition activity counterpart to ensure mutual awareness of all part-type issues and any recommended changes to the contractor's processes and to address anything that could affect program objectives. The contractor should conduct or support technical interchange or parts management IPT meetings to ensure that contractual requirements are met.

CHAPTER 3

Addressing Parts Management in the Contract

A contract normally begins with a solicitation requesting the submission of offers or quotations to the government. The solicitation and its supporting documents establish the technical and management requirements that must be addressed in the contractor's proposal. The contract will normally consist of several individual specifications, including the SOW, the Prime Item Development Specification, and the Contract Data Requirements List (CDRL).

The most effective PMPs are implemented during the initial contract and contract review process. Therefore, it is imperative that the engineer or individual responsible for parts management be involved up front so that all areas affecting parts management can be addressed.

Statement of Work

Parts management requirements, if needed, should be implemented in the contract through wording contained in the contract SOW, statement of objectives (SOO), or performance work statement (also referred to here as an SOW). The SOW can be written in two different ways. First, the government can write the SOW and ask the contractor to respond with a proposal. Alternatively, the government can include an SOO in the solicitation and ask the contractor to write and submit an SOW within a proposal in response to the SOO.

The SOO is usually a brief statement of the government's objectives for a program. It is not likely to contain enough detail to address parts management. If the solicitation contains an SOO, the contractor's SOW will need to address parts management. Before determining the wording to be used in the SOW, the following factors should be considered:

- Type of equipment or system, for example, operational system, operational support equipment, test vehicle, or maintenance or shop test equipment. Parts management may not be needed for certain test vehicles, maintenance equipment, or shop test equipment.
- Type of work. For an investigative or study contract, parts management may not be needed.
- Quantity of systems or equipment to be purchased on the contract.
- Reliability, safety, or nuclear hardness criticality of the parts or equipment, coupled with the environment where used (flight, ground combat, ground benign, etc.).
- Whether the item is a new design or a modification of an existing design and, if a modification, the extent of that modification.

- Maintenance concept, for example, organic or contractor logistics support, or performance-based logistics (logistics support at the part level).
- Whether all or some of the equipment is an off-the-shelf item or a non-developmental item (NDI). (Parts management is not required for off-the-shelf items or NDIs, except for modifications that introduce new parts into the design.)
- Ownership and level of technical data package, if required.

Depending upon the criteria above, there may be different tasks for different types of equipment within the same SOW. If so, each task should identify the level of parts management applicable to the specific equipment or types of equipment (such as support or test equipment).

Below is an example of a generic SOW that may be incorporated into contracts. The specific acquisition requirements may require tailoring of the principal SOW tasks.

> The contractor shall establish and maintain a Parts Management Program in accordance with MIL-STD-3018 for all new designs or modified equipment. This program will ensure that the use of parts meet the contractual requirements, reduce proliferation of parts within and across DoD weapon systems and equipment, through standardization, and enhance reliability and supportability to meet material readiness objectives, and reduce total-life-cycle costs. Also, the contractor shall describe how the parts management process is validated, how process improvements are incorporated, and how process variation is controlled.

The following statement may be added to the example paragraph above.

> The contractor shall document the plan in accordance with Data Item Description (DID) DI-SDMP-81748 and deliver the plan in accordance with the CDRL (DD Form 1423).

The following paragraph may be added to the example paragraph to address additional data and part use information and assist with validating the contractor's parts management process.

> The procedures, planning, and all other documentation, media, and data which define the Parts Management Program and the parts selected for use shall be made available to the government for its review. The government may perform any necessary inspections, verifications, and evaluations to ascertain conformance to requirements and adequacy of the implementing procedures.

To satisfy the mission-essential needs of a specific acquisition, it may be desirable to tailor the selection of parts from the preferred parts list (PPL) or baseline. This can be accomplished by limiting the selection of parts to a specific type, grade, or class. Such limitations of parts should be specified in the SOW.

CHAPTER 4

Elements of a Parts Management Program

Parts Management Plan

A parts management plan is a contract-specific application of a contractor's corporate parts management procedures that meets the objectives of the equipment system's mission profile, support strategy, expected service life, and the DoD parts management goals and objectives of reducing the logistics footprint and total life-cycle cost and of increasing the logistics readiness.

A parts management plan communicates how the contractor's in-house parts management process is conducted under the MIL-STD-3018 plan elements. The plan should delineate management structure, responsibilities, procedures, and controls (including subcontractor requirements) for the contractor's PMP. It usually is prepared by the contractor's standards, component, reliability engineer or person responsible for the parts management requirement, hereinafter referred to as the parts management engineer, in response to a contractual SOW requirement.

The parts management plan elements to be addressed are as follows:

- *Part selection baseline.* A corporate baseline (CB), parts selection list, or other databases shall be maintained to give visibility to designers and subcontractors of parts preferred for use in order to achieve part standardization goals over the total life cycle. In addition, the contractor is encouraged to use government-furnished automated tools to assist with the parts selection process.
- *Part selection and authorization process.* The management and organizational structure for standardization functions, the authority and responsibility for standardization policy, and procedures for authorizing new parts in design shall be included. The procedures shall identify the entity responsible for authorizing parts for use. The procedures shall also identify the structure and membership of a parts selection IPT, if applicable. Criteria used to ensure suitability of a part's intended use to the required application, order of preference used in considering new parts, and procedures for notifying associated disciplines (inventory, purchasing, quality assurance) in case of authorization of a new part shall be included.
- *Obsolescence management*. The plan shall detail procedures for obsolescence management, including proactive obsolescence forecasting and mitigation for applicable part types (e.g., microcircuits) and plans for reacting and achieving solutions to obsolescence impacts as they occur and affect the program. SD-22 provides guidance in the area.

- *Parts list or bill of materials (BOM).* The plan shall detail how and when the contractor submits initial and updated parts lists or BOMs to the government, as required by contract.
- *Subcontractor management*. Contractor procedures shall be detailed for establishing and maintaining subcontractor participation to the extent necessary to ensure satisfaction of the parts management objectives.
- *Part and supplier quality.* Provisions for assessing part suppliers and part quality, such as statistical process control data, audits, past performance, etc., shall be detailed.
- *Part-level documentation procedures.* Part-level documentation procedures shall be detailed and consistent with the program's configuration management, logistics strategies, and total lifecycle requirements.
- *Substitute and alternate part procedures.* The process for the management, definition, and documentation of substitute and alternative parts shall be detailed. In specifying the part replacement process, the contractor shall ensure the program is consistent with the intent and application of systems engineering disciplines (configuration management, quality, logistics, etc.).
- *Customer-contractor teaming.* The parts management plan shall address customer teaming to allow for continued insight into processes for program verification (e.g., IPT participation, technical interchange meetings, exchange of logistics data, and verification of performance metrics).
- *Additional elements (lead free, counterfeit parts, etc.)*. The process for addressing those additional elements, as identified by contract, shall be defined.

The acquisition activity should review the parts management plan against the requirements of MIL-STD-3018. After approval, the contractor is responsible for meeting the requirements of the plan and recommending changes to the plan depending on part-type technical or environmental issues or changes in the parts procurement business environment. All plan revisions shall be coordinated and approved by the acquisition activity.

Development of a Preferred Parts List or Corporate Parts Baseline

The PPL should be maintained in an electronic database and be readily available in-house. A preferred method is to tie the PPL to a computer-aided design (CAD) library or repository. This technique will avoid duplication of effort and ensure that only the parts listed in the PPL are used. The PPL, if appropriate, should be made available for use as early as possible during the design stage.

The intent of a PPL baseline is to maximize standardization during design by tailoring, streamlining, and minimizing the variety of types, grades, or classification of parts used in an acquisition. A PPL baseline should be used when parts are to be managed in a parts selection practice. Tailoring the PPL baseline requirements for a specific contract should be based on the following factors:

- Restrictions on the use of certain parts or part types
- Limitations in design imposed by part usage restrictions
- Reliability requirements
- DMSMS.

Parts Selection and Authorization

An in-house parts selection process should be followed and documented by the parts management representative, Parts Management Board (PMB), or IPT. Procedures for authorizing new parts should be included. The procedures should identify the entity responsible for authorizing parts for use and the structure and membership of the PMB or IPT, if applicable. Figure 3 is an example of a part selection process.

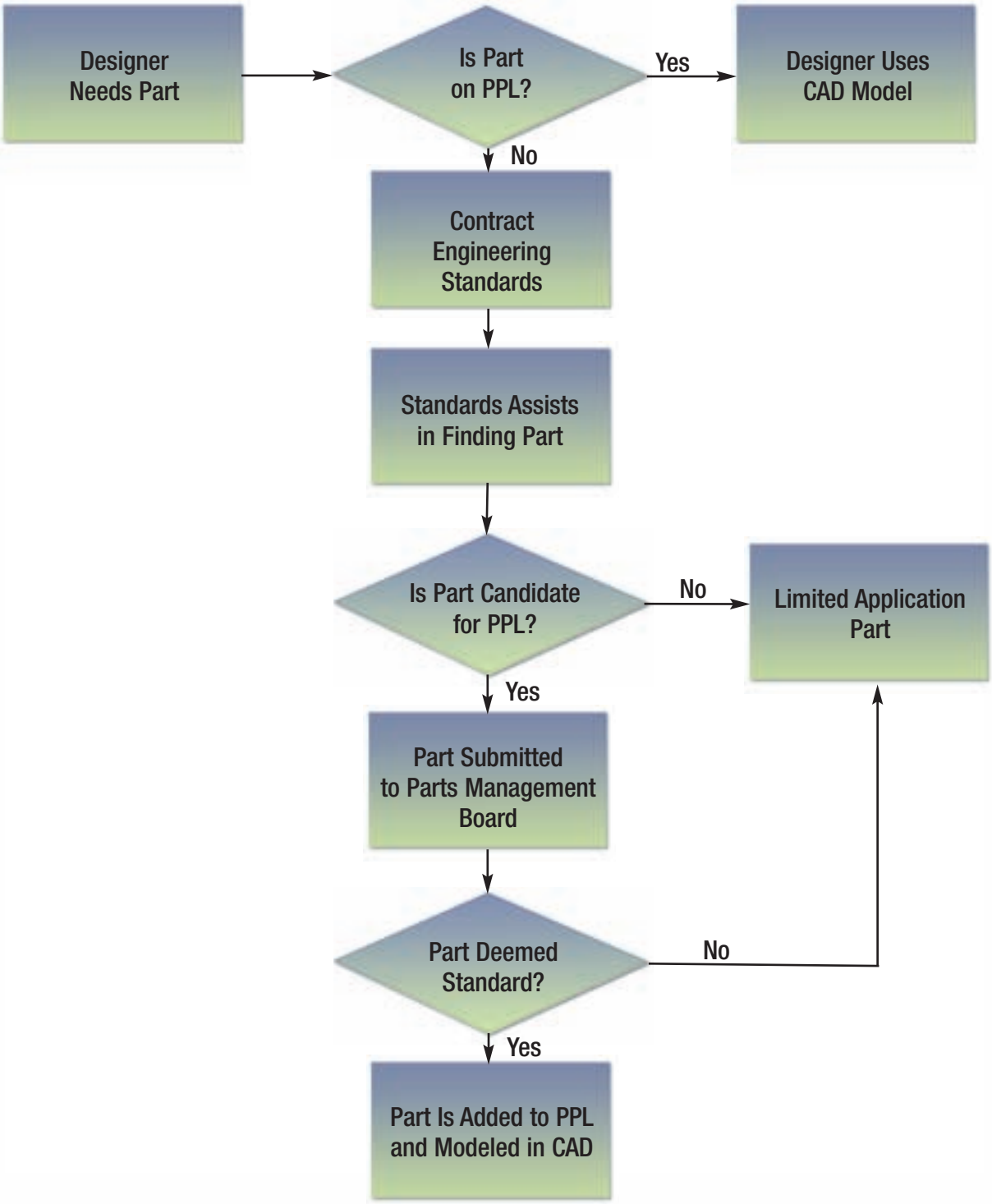
Order of Preference for Parts Selection

To maximize standardization and reduce life-cycle cost, parts should be selected based on the order of preference list in MIL-STD-3018, as applicable. Depending on contractual requirements, the following part selection criteria should be taken into account:

- Availability (DMSMS concerns, aging technology, number of sources)
- Application (derating, operation, use of the part, type of environment in which the part will be used)
- Cost-benefit analysis
- Part screening
- Qualification test data or past performance data
- Supplier selection
- Part technology/obsolescence (use of DMSMS databases, GIDEP)
- Compliance with contract performance requirements
- Technical suitability
- Government life-cycle cost optimization.

If alternate or substitute parts are to be selected, they should be considered in descending order of preference (most desirable to least desirable).

Figure 3. Part Selection Process



Obsolescence Management and Diminishing Manufacturing Sources

Obsolescence management is a discipline in and of itself. As the service life of a product extends beyond the technology life cycle incorporated in the design, problems with obsolescence and DMSMS arise. Both the defense and commercial markets must find ways to plan for and manage obsolescence and DMSMS because every product is subject to their effects. In other words, to be successful, parts management must address DMSMS throughout the product's life cycle.

Identification and resolution of DMSMS problems have both proactive and reactive elements. On the proactive side, prospective DMSMS situations need to be addressed during the initial phases of product development or modification. Current and potential DMSMS items need to be identified early in the product design phase, and associated design tradeoffs must be made to minimize life-cycle vulnerability. Reactive efforts, on the other hand, find cost-effective solutions to DMSMS problems identified during the production phase or in fielded units. A coordinated program approach, one that includes both proactive and reactive efforts, will support product availability and readiness objectives.

Several commercial companies identify obsolete parts and DMSMS and give predicted life expectancy of parts. Other sources of information include GIDEP, which is the source of DMSMS information for the military services' DMSMS programs, and the Parts Management Advisory Team (PMAT). Both groups perform parts DMSMS obsolescence screening, data gathering, and dissemination for DoD and its contractors. One or more of these services should be an active part of the DMSMS and obsolescence program of every organization involved in the design and production of electrical and mechanical products.

Subcontractor Management

Engineers and/or parts management personnel should participate in the technical evaluation of a subcontractor's response to a solicitation to ensure that the subcontractor has complied with parts management requirements. The prime contractor shall ensure compliance to their parts management plan or program. The parts management engineer, or equivalent, should be responsible for reviewing, verifying, and approving the subcontractors' parts management process.

In addition, a monitoring and feedback process should be used to review and evaluate any changes to established procedures. A good way to assess parts management is to form an IPT consisting of representatives of the contractor and subcontractors. The engineer should assist the IPT by analyzing the subcontractors' parts data. The IPT should review and resolve any adverse findings. The contractor may request that the customer participate on this IPT.

Part and Supplier Qualification Requirements

All processes used to qualify parts, parts manufacturers, and parts distributors should be documented following established quality assurance policies, procedures, and applicable standards. Parts should be qualified for the application in which they are used, and they should be assessed for supportability and life-cycle cost issues. Qualification of parts manufacturers and distributors may include an assessment of the manufacturer's documented processes including—but not limited to—its statistical process control data and its process controls on manufacturing, material, shipment, storage, notification concerning process changes, customer satisfaction, and quality measurement systems. In addition, depending on the contracted requirements associated with the part under interest, such special process controls as lead-free control and counterfeit control may be appropriate for assessment.

The parts management engineer should participate in (or have access to) the technical evaluation of suppliers and in the review and approval of suppliers' manufacturing processes and parts changes. Appendix A contains additional guidelines that may be helpful.

Substitute Part Practice

Substitute, alternate, and superseding part procedures may be required to address parts procurement issues and DMSMS issues:

- Substitute part—a part that possesses such functional and physical characteristics as to be capable of being exchanged with the design part only under specified conditions or in particular applications without alteration of the parts themselves or adjoining items. Substitute parts should be reviewed and approved in accordance with PMP requirements.
- Alternate part—a part that possesses functional and physical characteristics as to be equivalent in performance, reliability, and maintainability to an original design part without selection for fit or performance. An alternate part should be subject to the same part selection review and approval process as the original design part and should be included on the BOM.
- Superseding part—a part deemed desirable for use as a replacement part for the original design part (which becomes the superseded part). A superseding part meets all requirements of an alternate part, but is used exclusively in lieu of the original design part.

Substitute parts practice should never be used as a method to address failed parts, safety-critical issues, or elements where Class 1 changes (changes that must be approved by the government) or redesign may be involved. Below are some important things to consider when selecting alternate or substitute parts:

- *Substitute parts list (SPL) reference.* The SPL must be referenced directly on the drawing or BOM, or incorporated by reference in a separate specification called out in the drawing or BOM.

- *Contract requirements and customer notification.* The customer needs to be notified that an SPL exists. This notification can be accomplished by response to the solicitation or by submission of the company's parts management plan that describes its SPL procedures.
- *Depleting existing parts stock.* When an existing part is superseded, the determination must be made whether to deplete or to purge the existing inventory (deplete old and use new versus purge old and use new). Remember that when a part is replaced by a superseding part, if the superseded (old) part is being eliminated to meet a standardization requirement or for standardization purposes, existing stock is depleted before going to the superseding (new) part.

Parts Management Plan Structure

DID, DI-SDMP-81748, contains the format and content instructions for data required in a parts management plan. This DID specifies that the plan shall be in the contractor's format. The following is an example of a structure for a parts management plan:

1 *Cover Page.* Provide title and other general cover page content.

- 1.1 *Approved By Signature List.* Capture list of approval signatures needed for the plan.
- 1.2 *Record of Revision.* Track revision history.
- 1.3 *References.* List references mentioned in the plan.

2 *Scope.*

- 2.1 *Objective.* Define the objective of the plan.
- 2.2 *Applicability.* Define what program/system the plan applies to.
- 2.2.1 *Applicable Part and Material Categories.* Define what types of parts, materials, and processes the plan applies to.
- 2.2.2 *Applicable Documents.* List specifications, standards, handbooks, etc., that form a part of the plan to the extent specified herein.
- 2.3 *Definitions.* Define appropriate terms used in the plan.

3 *Parts Management Infrastructure.* Detail the enabling resources and capabilities available for the program.

- 3.1 *Parts Team Participants.* List the representatives from the specific organizations that will participate as core members of the parts team. This includes customer participation. (The parts team is typically responsible for the overall PMP.)
- 3.2 *Tasks and Responsibilities.* Describe the tasks for which the parts team is responsible (e.g., coordinate/execute the part selection and approval process, subcontractor management, tin whisker risk mitigation, etc.).
- 3.3 *Parts Team Meetings.* Detail how the parts team will interface.
- 3.4 *Parts Management Tools.* Identify the primary tools available to assist the parts

team and parts management process such as a corporate preferred parts baseline, Defense Parts Management Portal, etc.

4 *Parts Management Operations.* Detail how the infrastructure elements will be applied to the program.

- 4.1 *Part Selection Procedure.* Describe the parts selection process, including the order of preference.
  - 4.1.1 *Specific Part Type Selection Criteria.* Detail any part restrictions or specific selection criteria by part type/commodity that applies to the program.
- 4.2 *Part Approval Process.* Describe the authorization process to use parts on the program.
- 4.3 *Part Documentation.* Detail the part level documentation necessary for the program.
- 4.4 *Part and Supplier Quality.* Describe provisions for assessing part suppliers and part quality.
- 4.5 *Obsolescence Management.* Describe the proactive process used to mitigate obsolescence risk and procedures for reacting and achieving solutions to obsolescence impacts as they occur.
- 4.6 *Substitute and Alternate Part Procedures.* Describe the process for managing, defining, and documenting substitute and alternative parts.
- 4.7 *Parts List.* Detail how and when initial and updated parts lists will be submitted to the government.
- 4.8 *Additional Elements.* Detail the processes for addressing those additional elements that are not specifically mandated by MIL-STD-3018 but that relate to parts management and are relevant to the program. These can include such elements as tin whisker mitigation, part derating, counterfeit parts process, etc.
- 4.9 *Subcontractor Management.* Describe the procedures to ensure that subcontractor-furnished equipment satisfies the parts management objectives for the program.

Appendix A. Abbreviations.

Parts Management Effectiveness (Metrics)

To measure the effectiveness of a PMP, the parts management representative, PMB, or IPT should collect data to quantify its progress and identify trends. A basic metric is the percentage of preferred parts used, calculated as follows: (number of preferred parts in BOM ÷ total number of parts in BOM) × 100. Other metrics may be based on program needs.

Feedback

An important element of effective parts management is feedback. The parts management engineer needs feedback from all the functional areas to ensure that standardization requirements are meeting the objectives of the parts management plan. Feedback also is useful for identifying possible problem areas in a PMP. Sources of feedback information include the following:

- *Subcontractors.* Difficulties a subcontractor may be experiencing in manufacturing an item can often be alleviated by part substitutions. If the prime contractor maintains the design configuration of a subcontracted component, communication between the prime and the subcontractor is important to ensure that these changes are properly reflected in the parts management documentation.
- *Quality deficiency reports.* Reports of quality problems with parts come from many sources; use of this information can preclude use in future designs of parts with ongoing quality issues.
- *Customers.* Problems identified by the customer on fielded systems often indicate a need for parts selection changes.
- *Suppliers.* Part or component suppliers are valuable sources of information about the availability of items. Information from these sources can also help identify high-cost items and potential duplicate part numbers.

There are many sources of, and uses for, feedback information. The important thing to remember is that parts management is a dynamic practice. It needs periodic adjustments based on data and experience acquired from initial design all the way through production, sustainment, and material disposal. Other areas of feedback include design engineering, purchasing, manufacturing, logistics support, and PMATs.

CHAPTER 5

Parts Management Boards and Integrated Product Teams

PMBs or IPTs may be used to address the various part-type technical or procurement issues during the part selection process to assist with meeting the overall objectives of the contractual parts management requirements.

Parts Management Boards

The PMB is responsible for implementing effective standardization and parts management and for promoting the standardization and commonality of parts and processes across product lines. The PMB is responsible for screening and evaluating parts to be utilized in a specific system and should be established as early as possible to support the part selection process.

Because the PMB enhances the implementation of concurrent engineering, its membership may include representatives from the following functional disciplines and entities:

- Design engineering
- Procurement
- Engineering standards
- Manufacturing
- Reliability
- Quality
- Subcontractors and suppliers
- Customer.

General Responsibilities of the PMB Members. PMB members have the following general responsibilities:

- Attend board meetings as representatives of their departments/organizations.
- Bring parts issues to the PMB for discussion and resolution.
- Identify procedural deficiencies whose resolution will improve part standardization and reduce cost.
- Identify candidate parts for usage or replacement.
- Have the authority to act on behalf of their department in selection of standard parts, the approval and implementation of the PPL, and policies concerning those parts selected.

- Review requests to add parts to the PPL or CB based on the criteria identified in the section below on parts selection and authorization.
- Evaluate and recommend approval or disapproval of parts proposed for listing on the PPL. When requested, respond to balloted (potential) parts for possible inclusion in the PPL or CB.
- Ensure maximum use of standard parts. Minimize the number of different types and styles of parts used in the equipment or system. Assist with identifying and solving standard part issues.
- Ensure timely implementation of parts decisions.
- Specify requirements for part candidates.
- Assist with evaluating standard part suppliers.
- Establish requirements and screen parts for the SPL.
- Promote policies and procedures that ensure efficient parts management operation.
- Review and consider feedback regarding the PMP.
- Review and evaluate program metrics and consider changes to program processes and procedures as required in order to effectively meet PMP objectives.
- Assist with the review and evaluation of subcontractor parts management plans.

Chairperson. The parts management engineer's supervisor (or designee) should be the chairperson of the PMB. The chairperson (or designated representative when absent) does the following:

- Chairs PMB meetings
- Schedules PMB meetings, coordinates tasks, distributes agendas and minutes, and maintains records of PMB activities.
- Ensures all PMB actions are completed.
- Supervises preparation and maintenance of the PPL or CB.
- Supervises creation and maintenance of a CAD-modeled PPL parts library.
- Documents all PMB decisions.
- Serves as liaison to the PMAT.
- Supervises preparation and maintenance of the SPL.
- Performs all duties listed below for respective group members.

Members. PMB members do the following:

- Participate on the PMB.
- Assist with selecting standard parts to be used in a program.
- Ensure that the standardized PMP is based on the company requirements and any program contractual requirements.
- Have authority to audit parts lists and assembly drawings to ensure that products incorporate preferred parts and that the maximum quantity of preferred parts (consistent with design requirements) is selected.
- Establish, monitor, and maintain metrics to ensure that the most efficient parts management practice is in place.
- Have authority to approve and disapprove the use of non-preferred parts.
- Have authority to require the use of preferred parts where it can be demonstrated that the preferred part is interchangeable with and equal to, or better than, the non-preferred part.
- Have the authority in design reviews to facilitate incorporation of preferred parts through IPTs.
- Identify candidate parts for the SPL or PPL and recommend their inclusion to the PMB.
- Direct the preparation of documentation for preferred parts not documented by a defense specification or standard or by an NGS.
- Prepare and maintain a problem parts list that identifies parts and suppliers with a documented history of problems and noncompliance. Report to GIDEP nonconforming products, services, and processes from suppliers and subcontractors that adversely affect safety, health, and environment, in accordance with Office of Management and Budget Policy Letter 91-3.
- Coordinate, prepare, and maintain a PPL of standard parts that have been designated as preferred for use in equipment.
- Maintain files that include a list of PPL parts that have been reviewed by the PMB, a list of the acceptable substitute parts, and a list of any parts in the process of being reviewed by the PMB.
- Apply use or application restrictions on non-preferred parts.
- Review part performance history and provide an impact assessment to the PMB.
- Review existing specifications and test data and report on their impact on preferred parts.

- Review known acceptance part failures and advise PMB when such failures may affect the status of a PPL part.
- Ensure that GIDEP information is factored into preferred parts actions and that relevant information is captured in the appropriate databases.
- Interface with NGS bodies such as SAE International or Aerospace Industries Association to ensure that interests are addressed.

Integrated Product Teams

IPTs work toward the common goal of developing or producing a military system or equipment. They are cross-functional teams formed for the specific purpose of delivering a product for an external or internal customer. IPT members should have complementary skills and be committed to a set of performance objectives, a common purpose, and an approach for which they hold themselves mutually accountable. IPTs are essential to the implementation of parts management.

Members of an IPT represent the technical, manufacturing, business, and support functions critical to developing, procuring, and supporting the product. When these functions are represented during parts management activities, teams can consider alternatives more quickly, and in a broader context, and reach faster and better decisions.

Once on a team, the IPT member no longer functions solely as a member of a particular functional organization who focuses on a given discipline. Instead he or she functions as a team member who focuses on a product and its associated processes. Each individual should offer his or her expertise to the team and acknowledge the expertise of other team members. Team members work together to achieve the team's objectives.

The following factors are critical to formation of a successful IPT; these factors can be defined in a team charter that provides guidance:

- All functional disciplines influencing the product throughout its lifetime should be represented on the team.
- A clear understanding of the team's goals, responsibilities, and authority should be established between the business unit manager, the program and functional managers, and the IPT members.
- Resource requirements such as staffing, funding, and facilities must be identified.

CHAPTER 6

Parts Evaluation Support

Parts Management Advisory Team

Today, DoD acquisition activities and DoD contractors often need to select parts without the infrastructure that will enable them to fully research those decisions. PMATs are available to assist them with making their selections. They provide technical advice on electronic, electrical, and mechanical parts on an individual basis, or on parts lists at no cost to the requesting program. Points of contact can be found at http://www.dscc.dla.mil/programs/pmatdir./index.html.

A PMAT's part selection advice may produce alternatives that reduce cost, time, risks, and parts proliferation, while improving quality and supportability through the use of existing, proven standard parts. Contractual requirements, parts data, and unique evaluation criteria supplied by the submitter constitute the basis of these reviews.

Below are other useful services provided by the PMATs:

- *Information on parts and stock availability.* The PMATs provide information to identify parts obsolescence trends in the commercial marketplace. They also can provide information on Defense Logistics Agency (DLA) stock availability, spare parts procurement plans, and approved alternate national stock numbers.
- *Commercial part recommendations.* The PMATs recommend parts covering the spectrum of reliability levels from commercial standard parts, to unique military parts, to space-level parts. They tailor their recommendations to contract or customer requirements, including commonly used commercial parts such as commercial item descriptions (CIDs) and NGSs, engineering drawings like standard microcircuit drawings (SMDs) and DLA supply centers' engineering drawings, and standard parts covered in defense specifications. The PMATs will also take into account the effects of the parts on life-cycle costs (including logistical support) and standardization before making their recommendations.
- *DMSMS information*. The PMATs review individual parts and part lists for DMSMS impact on producibility, supportability, and maintainability. Contractors and acquisition activities use the results of these "health of system" reviews to evaluate the need to solve DMSMS problems through redesign, bridge buys, or part and printed circuit board emulation.

- *Responsiveness.* The PMATs handle routine reviews in about 10 days. Reviews of large part lists will take longer depending on the urgency, size, and complexity of the submitter's evaluation criteria.
- *Partnering.* The PMATs partner with original equipment manufacturers (OEMs), acquisition activities, and other industry and government organizations for the following purposes:
  - Develop standardized CBs
  - Identify common parts used throughout industry through a variety of tools
  - Assist companies, as parts management experts, with their standardization and parts management efforts
  - Assist with developing viable PMPs and provide advice relating to parts management in solicitations
  - Provide and update DMSMS information by screening CBs for obsolete and near obsolete parts when requested to do so
  - Provide source-of-supply information on obsolete parts, qualified products lists, and source-of-supply quality problems
  - Provide part history, application, quality, and trend information useful for determining life-cycle cost
  - Assist with establishing NGSs, CIDs, or defense specifications, as applicable, for commonly used vendor items and corporate documented vendor parts to eliminate duplication and provide standardization
  - Participate on IPTs and in technical interchange meetings with contractors, subcontractors, and military service acquisition activities.
- *Guidelines for providing supporting documentation to PMATs for part selection advice.* Supporting documentation is not required for parts that are defined by DoD standardization documents. These documents include defense and Federal specifications, CIDs, NGSs, and SMDs. Documentation may be necessary for all other parts.

Tools Supporting Parts Management

The following Internet-based and automated tools are available to assist with achieving parts management goals and objectives. Most, if not all, will require the users to establish authorizations and passwords for access. These tools are as follows:

- *Defense Parts Management Portal (DPMP).* The DPMP provides links to various parts management tools used throughout the entire life cycle of DoD systems. The tools enable users to access parts management information through a single point of entry. The intent of the tools is to provide engineering and material data relevant to design, parts availability, parts obsolescence, and parts program management information. This portal should help acquisition offices, designers, and specification preparing activities make informed decisions on PMPs, parts selection, and standardization.

- *ASSIST.* ASSIST is a comprehensive website providing access to current information associated with military and Federal specifications and standards in the management of the Defense Standardization Program. Managed by the DoD Single Stock Point located in Philadelphia, PA, ASSIST provides public access to standardization documents over the Internet. ASSIST has many powerful reporting features and an exhaustive collection of both digital and warehoused documents. ASSIST is the official source of DoD specifications and standards. This tool is available at http://assist.daps.dla.mil.
- *DMSMS/obsolescence tools.* Various tools, both commercial and government, are available to assist with mitigating the impact of part obsolescence (e.g., the DMSMS Knowledge Sharing Portal website: http://www.dmsms.org/). Several commercial companies can supply services that identify obsolete parts and/or diminishing manufacturing sources and give predicted availability of parts. Government sources, including GIDEP (whose website can be accessed from the DMSMS website), perform parts DMSMS obsolescence screening, data gathering, and disseminating for DoD and its contractors.
- *Document Standardization Division website.* The Document Standardization Division of the Defense Supply Center Columbus (DSCC) is the preparing activity for thousands of parts specifications and drawings for electronic components. This website (http://www.dscc.dla.mil/programs/milspec/default.asp) has search tools to aid in the identification and selection of high-quality and high-reliability standard electronic components (DSCC Specification Finder, Standard Microcircuit Cross Reference, etc.).
- *Federal Logistics Information System (FLIS).* An automated data processing system, FLIS is designed to provide a centralized data bank in support of DoD, Federal civil agencies, and foreign countries participating in the integrated logistics support program. FLIS provides essential information about supply items, including the national stock number, the item name, manufacturers and suppliers (including part numbers), freight data, hazardous material indicators, interchangeable and substitutable items, management data, and physical and performance characteristics. The WebFLIS restricted version has additional search features: multiple National Item Identification Number (NIIN) inquiry and unique item tracking. Users can perform searches for up to 2,500 NIINs at a time in the multiple NIIN inquiry field. Inquiries may be typed individually, cut and pasted from a spreadsheet or a Word document, or entered as a comma-separated value (see http://www.dlis.dla.mil/webflis/). A search feature for multiple part numbers is being planned.
- *Government-Industry Data Exchange Program.* GIDEP, sponsored by DSPO, is a cooperative activity between government and industry participants seeking to reduce or eliminate resource expenditures by sharing technical information essential during the research, design, development, production, and operational phases of the life cycle of systems, facilities, and equipment (see the website at http://www.gidep.org/). GIDEP data can materially improve the total quality and reliability of systems and components during the acquisi-

tion and logistics phases of the life cycle and reduce costs in the development and manufacture of complex systems and equipment.

- *Weapon System Impact Tool (WSIT).* WSIT, which is part of the ASSIST database, is a DSPO-sponsored website that provides an interface to access weapon system and specification content extracted from third-party sources, including unstructured legacy information. (The quality of extracted data is measured in accordance with ASQC Q3-1998, a standard issued by the American Society for Quality.) The interface enables users to search for and view results as structured data within a single WSIT coherent view of the weapons systems environment. To access WSIT, log on to ASSIST (http://assist.daps.dla.mil/).

CHAPTER 7

Costs and Benefits of Parts Management

Government and industry program managers and contractors must manage their scarce resources carefully to procure the advanced technology systems and equipment needed to retain and improve capabilities. Therefore, the total ownership cost of weapon systems or equipment is an important consideration for the program office.

Costs

The costs reflected in the contract should include the tasking to implement and maintain a parts management process for the life of the contract. These costs should be to support the parts management process elements tasking referenced in MIL-STD-3018. The costs should be determined by the individual weapon system or equipment acquisition contract life-cycle phase, with the highest cost being reflected during the engineering and manufacturing development phase when the major design effort and supporting part selection effort occur. Also during this phase, the contractor should ensure the subcontractors' participation to the extent that they would meet contractual requirements and the PMP objectives. Costs will be reduced during the subsequent life-cycle phases, depending on the reduction of design effort concerning changes and modifications to the weapon system or equipment.

Benefits

Parts management has several benefits:

- *Cost avoidance.* Parts management helps save equipment design and life-cycle costs by promoting the application of commonly used parts. Standardization of parts and replacing numerous similar parts with one common part results in fewer purchase orders and larger quantity buys because the common parts are used in multiple applications. Larger part-type buys enable both the contractor and the customer to benefit from the economies of scale. Part standardization also helps the contractor avoid the increased cost of maintaining technical data and storing, tracking, and distributing multiple parts.
- *Enhanced logistics readiness and interoperability.* When items or systems share common components, repair time is shorter, because parts are more likely to be on hand and technicians spend less time solving individual problems. Furthermore, using common components simplifies logistics support and enhances substitutability because fewer parts need to be stocked. This translates to savings in procuring, testing, warehousing, and transporting parts.

- *Increased supportability and safety of systems and equipment.* Preferred parts reduce risk and improve the chances that equipment will perform reliably. Preferred parts have a history of proven reliability, withstanding rigorous testing and performing at stated levels. Their use decreases the number of part failures, thus reducing the number of maintenance actions and potentially precluding failures that could cause mission failure or loss of life.
- *Reduced acquisition lead-time.* When preferred parts are used, the government and industry avoid the expenses and delays of designing and developing parts and the issues of acquiring a new item with no available history or documentation. Using preferred parts often reduces the time between the purchase request and the receipt of the part.

Cost-Benefit Analysis

Although many of the cost avoidance factors concerning the benefits of parts management are intangible, an analysis of historical parts management data clearly shows that the tangible benefits of reducing the proliferation of part types in new design can be substantial. Cost factors may vary depending on the organizational and operational structure of a given program or company. This method for estimating costs uses very conservative values for the factors it includes and does not include values for many nonrecurring and intangible cost factors.

The average total cost for adding a single new part into a system is about $27,500. An effective PMP will avoid this cost every time it precludes unnecessarily introducing a new part into the system. For example, rather than introducing a new part such as a nut or bolt, using an existing part results in an estimated cost avoidance of $27,500 during a weapon system's life cycle. Analysis of historical acquisition program parts management data has revealed that programs without parts management requirements introduce 2.5 percent more new parts into the logistics system than do programs with parts management requirements. Therefore, a program with 10,000 parts may easily achieve a life-cycle cost avoidance of $6.8 million, a not insignificant amount, through the use of an effective PMP.

As documented by the Parts Standardization and Management Committee in *Reduce Program Costs through Parts Management*, the cost related to adding a new part into the inventory derives from six different program areas: engineering and design, testing, manufacturing, purchasing, inventory, and logistics support. Table 1 summarizes the costs. (This document can be found at http://www.convergencedata.net/Docs/PartsMgt.pdf.)

Parts management is also effective in mitigating and managing part obsolescence problems. The cost of resolving part obsolescence problems can range from a low of $1,800 for part reclamation to a high of $400,000 for a major redesign effort. The DMSMS community is updating these figures, recognizing that today's obsolescence costs have increased by orders of magnitude. (See Appendix B for references concerning resolution cost factors for DMSMS.)

Table 1. Average Costs for Adding a Part into a System

Activity	Cost
Engineering and design	$12,600
Testing[a]	1,000
Manufacturing	2,400
Purchasing	5,200
Inventory	1,200
Logistics support	5,100
Total	**$27,500**

[a] The testing cost was reduced significantly because not every part added to inventory requires testing. However, every part needs to be evaluated, either by similarity, bench test, or analysis.

Appendix A. General Information for Part and Supplier Evaluation

Information to Obtain from Suppliers

Below is a sample of the type of information that should be considered when evaluating a supplier or new product:

- General performance specifications and product information
  - Product data sheets
  - Availability of product samples
  - Purchase descriptions used by other government activities or used in commercial transactions, including commercial specifications, standards, and statements of work
  - Participation with GIDEP with respect to Product Change Notices
  - Average time between model changes and practice of providing notices regarding parts inventories, upgrades, or production for phased-out models
  - Plans for handling upgrades and obsolescence
  - Types of quality assurance plans in effect (lead-free control plan, counterfeit mitigation control plan, etc.)
  - Types of quality management systems maintained
  - Length of time the product has been produced or service provided
  - Product quality, reliability, and maintainability experience of similar user customers
  - Type of product operation—original component manufacturer, (OCM), OEM, authorized distributor, broker, etc.—or, if not OCM or OEM, type of authorization held
  - Product warranty and return policies
  - Environmental and disposal considerations
  - Safety considerations related to the product's use
  - List of products and company services satisfying identical or similar service requirements
  - Cost drivers in the manufacture and use of the product
  - Applicable regulatory and de facto standards
- Supportability issues
  - Product quality, reliability, and maintainability experience of similar users
  - Repair parts availability and lead-times, documentation, pricing, and distribution systems
  - Customer service, installation, checkout, and user customer operation and maintenance instructions
  - Requirements and provisions for manpower and personnel
  - Competitive or sole-source repair and support base
  - Training and training support requirements
  - Requirements for and availability of tools, test equipment, computer support resources, calibration procedures, operations, and maintenance manuals
  - Commercial repair capabilities

- Supplier calibration, repair, and overhaul practices and capabilities documentation
- Supplier commitment to outyear support
- Availability and type of technical support, customer support, and service
- Degree of technical data package availability (including legacy part support)
- Stability of current configuration and technology

- Test data
  - Hardware, software, and manpower interface issues such as human factors and product safety as experienced by similar users or customers
  - Manufacturer test results
  - Certification or test results from independent test organizations
  - Reliability/availability of test data.

Information to Provide to Suppliers

Below is a sample of the type of information that may be required by a supplier to provide a part that will meet design requirements:

- Operating characteristics for hardware and software
- Environmental conditions for use
- Usage (e.g., fixed, airborne, tactically deployable) during service life
- Certificate of conformance/traceability requirements
- Quality and reliability assurance criteria
- Compliance requirements to standards
- Shipping restrictions
- International Traffic in Arms Regulations
- System interface or integration requirements
  - Computer language, speed, throughput, ports, memory, and expansion potential
  - Radio transmission frequency requirements and allocation status
  - Rules for government use of frequency spectrum
  - Human factors considerations
  - Open architecture requirements
- Maintainability information
  - Self-test requirements
  - Warranty requirements
  - Limitations, if any, on organizational-level support equipment
- Communications-computer system interface information
  - Software portability to other communications-computer systems
  - Operating duty cycle (e.g., 24 hours, intermittent)
  - Input power quality (drops, surges, spikes, noise)
  - Essential safety characteristics
  - Reliability, maintainability, and survivability data
  - Nuclear hardening requirements
  - Chemical, biological, and radiological survivability data
  - Electromagnetic compatibility/electromagnetic interference susceptibility.

Appendix B. References

Documents

Defense Acquisition Guidebook:
https://akss.dau.mil/dag/

Diminishing Manufacturing Sources and Material Shortages: A Guidebook of Best Practices and Tools for Implementing a DMSMS Management Program, SD-22, September 2009:
http://www.assistdocs.com/search

"Parts Management," MIL-STD-3018, October 2007:
http://assist.daps.dla.mil/quicksearch/basic_profile.cfm?ident_number=275861

Parts Management Plan, DI-SDMP-81748, October 2007:
http://assist.daps.dla.mil/quicksearch/basic_profile.cfm?ident_number=275859

"Reporting Nonconforming Products," Office of Management and Budget Policy Letter 91-3, April 1991:
http://www.whitehouse.gov/omb/procurement/policy_letters/91-3_040991.aspx

Resolution Cost Factors for Diminishing Manufacturing Sources and Material Shortages, Final Report, February 1999 (prepared by Defense Microelectronics Activity), and Supplemental Report, 2001:
http://www.dmea.osd.mil/docs/resolution_cost_factors.pdf and
http://www.dmea.osd.mil/docs/cost_metrics_revision1.pdf

Websites

Acquisition Streamlining and Standardization Information System (ASSIST) (does not require ASSIST login or password):
http://assist.daps.dla.mil/quicksearch and
http://www.assistdocs.com

Defense Microelectronics Activity DMSMS and Obsolescence:
http://www.dmea.osd.mil/index.html

Defense Supply Center Columbus:
http://www.dscc.dla.mil/

Diminishing Manufacturing Sources and Material Shortages (DMSMS):
http://www.dmsms.org/

Government-Industry Data Exchange Program (GIDEP):
http://www.gidep.org/

Parts Standardization and Management Committee:
http://www.dscc.dla.mil/programs/psmc/

Weapon System Impact Tool (WSIT) (requires ASSIST login and password):
https://wsit.xsb.com

Appendix C. Glossary

Alternate Part. A part that is an acceptable replacement part for a specific design application.

Common Corporate Baseline (CCB). A list of parts (standard and nonstandard) identified from among the submitted corporate baselines based upon their frequency of use within a given time frame (e.g., all parts common to two or more corporate baselines that have been submitted or updated within the last 3 years).

Corporate Baseline (CB). A list of parts approved by a corporation for use in equipment design application. The contractor creates and maintains this list.

Data Item Description (DID). A completed form that defines the data required of a contractor. DIDs specifically define the data content, preparation instructions, format, and intended use.

Diminishing Manufacturing Sources and Material Shortages (DMSMS). The loss or impending loss of the last known manufacturer or supplier of raw materials, production parts, or repair parts.

Life Cycle. The time contained in the period from the first contract award date through the conclusion of government ownership of the military system or equipment.

Part. One piece, or two or more pieces joined together, that is normally subject to disassembly without destruction or impairment of its design purpose.

Parts List. A list of all parts used in design or construction of the military system or equipment. Initially, it contains those items designed into the system. Upon production, it contains those items that are incorporated into the actual units produced.

Parts Management. The practice of considering the application, standardization, technology (new and aging), system reliability, maintainability, supportability, and cost in selecting parts and addressing availability, logistics support, DMSMS, and legacy issues in supporting them throughout the life of the systems.

Parts Management Advisory Team (PMAT). A team of program and commodity specialists at the Defense Logistics Agency supply Centers who will be available (to the acquisition activity and contractor) to advise and provide recommendations on parts management plans and processes and on the selection and use of preferred (standard and commonly used) parts.

Parts Management Board (PMB). A group composed of people who represent parts management responsibilities for their individual companies. The PMB is responsible for identifying part status for inclusion in the PPL or CB.

Parts Management Plan. A contract-specific application of a contractor's corporate parts management procedures that meets the objectives of the equipment system's mission profiles, support strategy, expected service life, and DoD parts management goals and objectives.

Parts Standardization and Management Committee. A DSPO-chartered government and industry forum that influences and supports parts management and standardization.

Potential Part. A part reviewed by the PMB and deemed not justified for use at that time although the part may have potential future usage.

Preferred Parts List (PPL). A list of parts preferred for use in equipment design, which often contains descriptions, attributes, or application information. The term is used in this document to represent the names of several different contractor and government parts lists. Examples of such lists are approved parts lists, approved parts baselines, corporate baselines, common parts lists, common corporate parts lists, parts selection lists, preferred parts lists, and program parts selection lists. These parts lists have similar purposes, but their degree of application varies from company to company and within different government acquisitions.

Preferred (Standard) Part. A standard part that by the nature of its historical usage or its future potential usage has been designated by the PMB as "standard" or preferred for use in equipment. The part shall be adequately controlled and documented by a government; an NGS body; or a company specification, standard, or drawing.

Prohibited Parts List. A list of parts deemed unacceptable by the PMB for use in a company's products because of cost, quality, safety, etc.

Substitute Parts List (SPL). A list of all approved substitute parts used in production equipment. SPLs are typically established by program or project, as the viability of a substitute part is determined against specific application requirements. Substitute parts are used instead of an equivalent part listed in the PPL and the BOM, and are typically used on a limited basis.

Appendix D. Abbreviations

BOM	bill of materials
CAD	computer-aided design
CB	corporate baseline
CDRL	Contract Data Requirements List
CID	commercial item description
DID	data item description
DLA	Defense Logistics Agency
DMSMS	Diminishing Manufacturing Sources and Material Shortages
DoD	Department of Defense
DPMP	Defense Parts Management Portal
DSCC	Defense Supply Center Columbus
DSPO	Defense Standardization Program Office
FLIS	Federal Logistics Information System
GIDEP	Government-Industry Data Exchange Program
IPT	integrated product team
NDI	non-developmental item
NGS	non-government standard
NIIN	National Item Identification Number
OCM	original component manufacturer
OEM	original equipment manufacturer
PMAT	Parts Management Advisory Team
PMB	Parts Management Board

PMP	Parts Management Program
PPL	preferred parts list
PSMC	Parts Standardization and Management Committee
SMD	standard microcircuit drawing
SOO	statement of objectives
SOW	statement of work
SPL	substitute parts list
WSIT	Weapon System Impact Tool

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