PARTS MANAGEMENT EXECUTIVE OVERVIEW

Industry Day

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OVERVIEW

Today's weapon systems and equipments acquisition environment is characterized by

- Rapidly changing designs.
- Increased use of commercial part types.
- Offshore manufacturing of parts.
- Diminishing manufacturing sources and material shortages (DMSMS).

These factors have increased risk for Department of Defense (DoD) weapons systems and equipment acquisition contracts.

OVERVIEW (Cont'd)

Parts management focuses on selecting the best parts at the design phase of an acquisition program under an overarching Systems Engineering umbrella.

Use of the following part types would be preferred.

- Non-Government Standards
- Military Standards
- Commonly used parts already in the DoD inventory

OVERVIEW (Cont'd)

These will provide 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
- Logistic footprint
- Logistic response time
- Total ownership costs

WHAT IS A PART?

A part is “one or more pieces joined together, which are not normally subject to disassembly without destruction or impairment of their intended design use.”

Several examples of these part types include:

- Microcircuits
- Connectors
- Resistors
- Capacitors
- Fasteners
- Bearings
- Valves
- Screws
- Rivets

WHAT IS PARTS MANAGEMENT?

"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."

WHAT IS PARTS MANAGEMENT? (Cont'd)

Parts management is an integrated effort to streamline the selection of preferred or commonly used parts during the design of weapon systems and equipment.

This process determines the optimum parts while considering all the factors that may affect program outcomes.

WHY IS PART SELECTION IMPORTANT?

Parts are the building blocks from which systems are created and greatly impact hardware dependability and readiness. Since the reliability, maintainability, and supportability of the end item are dependent upon these building blocks, the importance of selecting and applying the most effective parts management program cannot be overemphasized.

WHY IS PART SELECTION IMPORTANT? (Cont'd)

Part selection factors:

- Technical characteristics
- Reliability
- Life cycle costs
- Commonality
- Performance history
- Vendor performance
- Qualification
- Potential Obsolescence
- Standardization
- Manufacturing
- Maintenance

WHY IS PART SELECTION IMPORTANT? (Cont'd)

Proper part selection can enhance

- Reliability
- Maintainability
- Economies of scale
- Supportability
- System performance
- Logistic readiness
- Operational readiness and interoperability

Proper part selection can decrease

- Logistic footprint
- Weapon systems and equipment total ownership costs

WHAT IS DoD's POLICY ON PARTS MANAGEMENT?

A directive memo to be signed by the Under Secretary of Defense (Acquisition, Technology, and Logistics) will require that parts management be embedded with program planning and systems engineering for new weapons systems and major modifications by Milestone B and continuing throughout the entire acquisition life cycle.

WHAT IS DoD's POLICY ON PARTS MANAGEMENT? (Cont'd)

Parts management information is referenced in the Defense Acquisition Guidebook (DAG) in Chapter 4: Systems Engineering.

- Section 4.4.6: Diminishing Manufacturing Sources and Material Shortages
- Section 4.4.12: Parts Management

Parts Management is also referenced in Chapter 5: Life Cycle Logistics.

- Section 5.3.1: Architecture Considerations

WHEN SHOULD PARTS MANAGEMENT BE IMPLEMENTED?

Materiel Solution Analysis Phase. An output of the supportability concept - considered in the Analysis of Alternatives.

Technology Development Phase (Milestone A). 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). Requirements should be implemented under an approved parts management plan.

WHEN SHOULD PARTS MANAGEMENT BE IMPLEMENTED? (Cont'd)

Production and Deployment Phase (Milestone C). Required for changes or modification to the baseline design or parts obsolescence issues.

Operations and Support Phase. Required for changes or modification to the baseline design or parts obsolescence issues.

HOW ARE PARTS MANAGEMENT REQUIREMENTS IMPLEMENTED?

Parts management requirements should be documented in the

- Statement of work (SOW)
- Statement of Objectives (SOO)
- Performance work statements (PWSs)

(Collectively known as SOW)

HOW ARE PARTS MANAGEMENT REQUIREMENTS IMPLEMENTED? (Cont'd)

SOW Example:

> The contractor shall establish and maintain a parts management program in accordance with MIL-STD-3018 for all new designs or modified equipment. The contractor shall describe how the parts management process is validated, how process improvements are incorporated, and how process variation is controlled.

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

WHAT IS A PARTS MANAGEMENT PLAN?

"A parts management plan is a contract-specific application of a contractor's corporate parts management procedures which 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 increasing the logistics readiness."

WHAT IS A PARTS MANAGEMENT PLAN? (Cont'd)

A parts management plan communicates how the contractor's in-house parts management process is conducted under the contract requirements.

The plan is prepared by the contractor.

The contractor must meet plan requirements or recommend changes based on:

- Changes in part type technical or environmental issues.
- Changes in the parts procurement business environment.

WHAT DOES A PARTS MANAGEMENT PLAN ADDRESS?

- Parts selection baseline
- Parts selection and authorization process
- Obsolescence management
- Parts list
- Subcontractor management
- Part and supplier quality
- Part level documentation procedures
- Substitute and alternative part procedures
- Customer-Contractor teaming
- Additional elements (e.g. lead-free, counterfeit parts, etc.)

WHO DOES PARTS MANAGEMENT?

Both the Acquisition Activity and the contractor have responsibilities concerning the implementation of parts management requirements.

The Acquisition Activity is responsible for determining and/or 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.

WHO DOES PARTS MANAGEMENT? (Cont'd)

The contractor is responsible for teaming with the acquisition activity to implement Parts Management Program contract requirements.

Part selection and application is the responsibility of the contractor whose primary requirement is to meet the performance objectives of the system or equipment.

WHAT ARE THE COSTS & BENEFITS OF PARTS MANAGEMENT?

The costs reflected in the contract include the tasking to implement and maintain a parts management process for the life of the contract.

Costs are determined by the individual weapon system or equipment acquisition contract life cycle phase; with the highest cost found in the Engineering and Manufacturing Development Phase.

WHAT ARE THE COSTS & BENEFITS OF PARTS MANAGEMENT? (Cont'd)

Costs are reduced during the subsequent life cycle phases depending upon the reduction of design effort concerning changes and modifications to the weapon system or equipment.

Benefits:

- Cost avoidance
- Enhanced logistics readiness and interoperability
- Increased supportability and safety of systems and equipment
- Reduced acquisition lead-time

WHAT ARE THE COSTS & BENEFITS OF PARTS MANAGEMENT? (Cont'd)

Cost-Benefit Analysis

The average total cost for adding a single new part is about $27,500. 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 might easily achieve a life-cycle cost avoidance of $6.8 million.

WHAT ARE THE COSTS & BENEFITS OF PARTS MANAGEMENT? (Cont'd)

Six cost-related program activities:

- Engineering and design
- Testing
- Manufacturing
- Purchasing
- Inventory
- Logistics support

More detailed information can be found in the PSMC business case "Reduce Program Costs through Parts Management."
(See http://www.convergencedata.net/Docs/PartsMgt.pdf).

WHAT ARE THE COSTS & BENEFITS OF PARTS MANAGEMENT? (Cont'd)

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.

WHAT TOOLS SUPPORT PARTS MANAGEMENT?

- Acquisition Streamlining and Standardization Information System (ASSIST)

  (See http://assist.daps.dla.mil).
- Weapon System Impact Tool (WSIT)

  (See http://assist.daps.dla.mil/).
- DMSMS/Obsolescence Tools

  (See http://www.dmsms.org/).

WHAT TOOLS SUPPORT PARTS MANAGEMENT?

- DSCC-Document Standardization Division Website (See http://www.dscc.dla.mil/programs/milspec/default.asp).
- Federal Logistics Information System (FLIS) (See http://www.dlis.dla.mil/webflis/).
- Government-Industry Data Exchange Program (GIDEP) (See http://www.gidep.org/).
- Defense Parts Management Portal (DPMP)

WHO IS RESPONSIBLE FOR THE DoD PARTS MANAGEMENT PROGRAM?

Currently, DoD weapon systems and equipment programs are experiencing increased risk due to problem part issues.

The Defense Standardization Program Office (DSPO) is Responsible for the DoD Parts Management Program. In November 2006, the DSPO chartered the Parts Standardization and Management Committee (PSMC) to advise in the development of policy, procedures, and guidance related to parts management.

WHO IS RESPONSIBLE FOR THE DoD PARTS MANAGEMENT PROGRAM? (Cont'd))

The DSPO's goal is to establish parts management best practices across DoD to increase weapon system operational availability and reduce life cycle costs. The PSMC offers a standing forum for DoD and industry communication and collaboration to promote and enable effective parts management in support of the Warfighter.