



ACQUISITION,  
TECHNOLOGY  
AND LOGISTICS

THE UNDER SECRETARY OF DEFENSE  
3010 DEFENSE PENTAGON  
WASHINGTON, DC 20301-3010

JUL 31 2008

MEMORANDUM FOR SECRETARIES OF THE MILITARY SERVICES

SUBJECT: Implementing a Life Cycle Management Framework

Implementing life cycle management is a top priority for the Department of Defense. To achieve that objective, DoD must seamlessly integrate its acquisition and life cycle sustainment policies. To that end, this memorandum establishes a strategy and provides direction to achieve the following: reinforce the implementation of mandatory life cycle sustainment metrics; align resources to achieve readiness levels; track performance throughout the life cycle; and implement performance-based life cycle product support strategies.

Reinforce Life Cycle Sustainment Metrics

Chairman of the Joint Chiefs of Staff Instruction 3170.01F implemented a mandatory sustainment Key Performance Parameter (KPP) - Materiel Availability, along with two mandatory sustainment Key System Attributes (KSAs): Materiel Reliability and Ownership Cost. Definitions of these metrics are attached. Within 60 days of this memorandum, all Major Defense Acquisition Programs (MDAPs) shall establish target goals for these metrics. These metrics align with recent Joint Staff actions and establish a single set of sustainment metrics throughout a program's life cycle. Former MDAPs no longer submitting Selected Acquisition Reports to Congress will be considered for reporting in the future. Additional metrics, such as mean down time, customer wait time, and footprint reduction continue to be other appropriate sustainment metrics. The Deputy Under Secretary of Defense for Logistics and Materiel Readiness (DUSD(L&MR)) working with the Director of Acquisition Resources and Analysis (ARA) and the Military Departments will provide further clarification on reporting requirements against these metrics within 60 days. The Defense Acquisition Management and Information Retrieval (DAMIR) system is anticipated to be the repository for these metrics with the Military Departments ultimately reporting these metrics via a Service-oriented architecture information reporting system into the DAMIR.

Align Resources to Readiness

Many program decisions are made prior to Milestone B and throughout the design and production phase without understanding the impact of these decisions on materiel readiness, reliability, and ownership cost. In cooperation with the DoD Comptroller and



the Director, Program Analysis and Evaluation, a 2-year pilot program was initiated to determine the feasibility of annually assessing the attainment of the life cycle metrics mentioned above as part of the Planning, Programming, Budgeting and Execution System activities. I ask your continued support of this important pilot effort.

Further, to support the analysis and assessment of resources, readiness, and other key life cycle sustainment metrics, programs will use predictive modeling and simulation (M&S) tools. As a first step toward better understanding the full spectrum of tools available to assess these metrics, the Military Departments are to report to DUSD(L&MR) within 90 days on inventories of existing tools used by the Military Departments for this purpose and any future plans for developing new M&S tools. DUSD(L&MR) will review the information, catalog it, identify gaps in the toolset, and provide recommendations to me not later than 60 days following receipt of the information from the Military Departments.

### Track Performance Throughout the Life Cycle

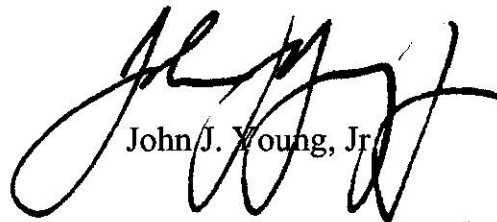
Currently, acquisition documentation does not ensure the integration of acquisition and sustainment processes in a life cycle framework. In addition to establishing life cycle metrics early in the acquisition process, it is necessary to track and monitor progress in achieving these metrics through the operations and support phase. To that end, DUSD(L&MR), the Director, ARA, the Director, Systems and Software Engineering, and the Director, Defense Procurement, Acquisition Policy, and Strategic Sourcing will partner to determine what DoDI 5000.02 acquisition policy and/or process changes are necessary for Acquisition Strategies and Acquisition Program Baselines to adopt a greater life cycle management orientation. I also expect acquisition and sustainment processes to track and document life cycle metrics in the Life Cycle Sustainment Plan and sustainment design attributes in the System Engineering Plan. The proposed changes should be briefed to me within 90 days.

Consistent with current acquisition policies, I direct all MDAPs to report against these life cycle sustainment metrics at program milestones and periodic program reporting venues, including Defense Acquisition Executive Summary reviews. I also intend to implement policy requiring periodic Defense Acquisition Executive reviews following Initial Operational Capability to ensure attainment of these metrics. To that end, I direct DUSD(L&MR) and Director, ARA, in conjunction with the Assistant Secretary of Defense (Networks and Information Integration) and the Deputy Under Secretary of Defense for Acquisition & Technology, to develop and present policy recommendations to implement these post-IOC reviews to me within 90 days.

Implement Performance-Based Life Cycle Product Support Strategies

For several years, acquisition and sustainment managements have been appropriately focused on performance-based strategies. DoD Directive 5000.1 currently recognizes performance-based logistics (PBL) as a key policy principle. I direct the Secretaries of the Military Departments to continue this emphasis with a more precise orientation on life cycle product support. PBL offers the best strategic approach for delivering readiness, reliability, and reduced ownership costs. All of the policies and directions discussed in this memorandum are enabled by effective PBL implementation. I want to emphasize that PBL is not a contracting strategy – it is indeed a strategy applicable to both private sector and DoD organic providers. To facilitate effective PBL implementation, I direct the DUSD(L&MR) to reflect appropriate procedural strengthening in the Defense Acquisition Guidebook. I further direct that all MDAPs reflect PBL implementation approaches in life cycle sustainment planning.

This memorandum applies to all MDAPs. The DUSD(L&MR) will coordinate updates to appropriate policy as required by this memorandum. I strongly encourage the Secretaries of the Military Departments, through the Service Acquisition Executives, to apply these policies to other acquisition categories. My point of contact for this effort is Mr. Randy Fowler, Assistant Deputy Under Secretary of Defense for Materiel Readiness, at 703-614-6082 or Randy.Fowler@osd.mil.



John J. Young, Jr.

Attachment:  
As stated

cc:  
USD(C)  
VCJCS  
DUSD(A&T)  
ASD(NII)  
Director, PA&E  
Director, DPAP  
Director, AR&A

## ATTACHMENT

### LIFE CYCLE SUSTAINMENT METRICS

#### 1. MATERIEL AVAILABILITY

Materiel Availability is a measure of the percentage of the total inventory of a system operationally capable (ready for tasking) of performing an assigned mission at a given time, based on materiel condition. This can be expressed mathematically as (the number of operational end items divided by the total population). Materiel Availability also indicates the percentage of time that a system is operationally capable of performing an assigned mission and can be expressed as (uptime divided by (uptime plus downtime)). Determining the optimum value for Materiel Availability requires a comprehensive analysis of the system and its planned use, including the planned operating environment, operating tempo, reliability alternatives, maintenance approaches, and supply chain solutions. Materiel Availability is primarily determined by system downtime, both planned and unplanned, requiring the early examination and determination of critical factors, such as the total number of end items to be fielded and the major categories and drivers of system downtime. The Materiel Availability Key Performance Parameter must address the total population of end items planned for operational use, including those temporarily in a non-operational status once placed into service (such as for depot-level maintenance). The total life cycle timeframe, from placement into operational service through the planned end of service life, must be included.

#### 2. MATERIEL RELIABILITY

Materiel Reliability is a measure of the probability that the system will perform without failure over a specific interval. Reliability must be sufficient to support the warfighting capability needed. Materiel Reliability is generally expressed in terms of a mean time between failure(s) (MTBF) and, once operational, can be measured by dividing actual operating hours by the number of failures experienced during a specific interval. Reliability may initially be expressed as a desired failure-free interval that can be converted to MTBF for use as a Key System Attribute (KSA) (e.g., 95 percent probability of completing a 12-hour mission, free from mission-degrading failure; and 90 percent probability of completing 5 sorties without failure). Specific criteria for defining operating hours and failure criteria must be provided together with the KSA. Single-shot systems and systems for which other units of measure are appropriate must provide supporting analysis and rationale.

### 3. OWNERSHIP COST

Ownership Cost provides balance to the Sustainment solution by ensuring that the Operations and Support (O&S) costs associated with materiel readiness are considered in making decisions. For consistency and to capitalize on existing efforts in this area, the Cost Analysis Improvement Group's O&S Cost Estimating Structure will be used in support of this KSA. Only the following cost elements are required: 2.0 Unit Operations (2.1.1 (only) Energy (fuel, petroleum, oil, lubricants, electricity)); 3.0 Maintenance (All); 4.0 Sustaining Support (All except 4.1, System Specific Training); 5.0 Continuing System Improvements (All). Fuel costs will be based on the fully burdened cost of fuel. Costs are to be included regardless of funding source. The KSA value should cover the planned life cycle timeframe, consistent with the timeframe used in the Materiel Availability Key Performance Parameter. Sources of reference data, cost models, parametric cost estimating relationships, and other estimating techniques or tools must be identified in supporting analysis. Programs must plan for maintaining the traceability of costs incurred to estimates and must plan for testing and evaluation. The planned approach to monitoring, collecting, and validating operating and support cost data to supporting the KSA must be provided.