



OFFICE OF THE UNDER SECRETARY OF DEFENSE
3000 DEFENSE PENTAGON
WASHINGTON, DC 20301-3000

DEC 11 2008

ACQUISITION
TECHNOLOGY
AND LOGISTICS

MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS
(ATTN: SERVICE ACQUISITION EXECUTIVES)

SUBJECT: Implementation of Life Cycle Sustainment Outcome Metrics Data Reporting

This memorandum provides the procedures to implement sustainment data reporting required by the July 31, 2008, Under Secretary of Defense (Acquisition, Technology & Logistics) "Life Cycle Management Framework" memorandum and the March 10, 2007, Deputy Under Secretary of Defense (Logistics & Materiel Readiness) "Life Cycle Metrics Outcomes" memorandum, copies attached. These memoranda requested the Services report the life cycle sustainment metrics of materiel availability, materiel reliability and ownership cost on all Major Defense Acquisition Programs (MDAPs). A fourth metric, mean down time, is useful and should be considered for inclusion, but is not required. In addition, future reporting of additional relevant metrics, such as customer wait time and footprint reduction, will continue to be explored. Programs that are post-Milestone B are allowed to use established metrics in conjunction with the Joint Staff instructions provided by CJCSM 3170.01C in defining their metrics.


The USD(AT&L) memorandum directed that the Services set goals for these metrics and stipulated the Defense Acquisition Management Information Retrieval (DAMIR) system as the mechanism for reporting outcomes. Our objectives are to achieve access and visibility into the Life Cycle Sustainment (LCS) outcome metrics from authoritative sources in the Services and to work collaboratively with the Services in managing life cycle program objectives. The Services will begin to report on these metrics within 90 days of the date of this memorandum. The metrics will be updated on a quarterly basis. Reports will be submitted in conjunction with the quarterly Defense Acquisition Executive Summary (DAES) web services data submission. Definitions and instructions on the use and reporting format of the metrics are contained in Attachment 3.

The Services are permitted to use their own reporting mechanism until the full data link between DAMIR and the Service information system is established. This system must be easily accessible for government and contractor OSD staff information queries and will be updated on the planned quarterly basis. If a Service cannot provide a standard reporting mechanism to OSD within 90 days, it is directed to submit the information using the template at Attachment 4. Submission in this medium will allow the data to be tracked and recorded as historical information. These submissions will be

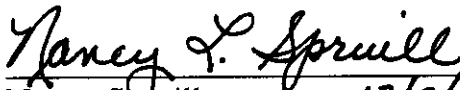


sent to the L&MR Sustainment Tracker email address, atlcsmetrics@osd.mil, for posting on the DAMIR website under the supporting documentation section of Purview. Consistent with the ongoing AT&L Acquisition Visibility Service-Oriented Architecture pilot project objectives, ARA and L&MR will work with the Services to incorporate these new data requirements into the Services' automated acquisition information systems and DAMIR web services, allowing the LCS metrics to be exchanged electronically.

The points of contact for this memorandum are: for technical information on the content of the metrics, Mr. Tony Stampone, OADUSD(Materiel Readiness) at (703) 614-3838, anthony.stampone@osd.mil; and for DAMIR issues, Ms. Elizabeth Flaharty, OUSD AT&L(ARA) Enterprise Information & OSD Studies, at (703) 693-7954, elizabeth.flaharty@osd.mil.



Jack Bell DEC 11 2008
Deputy Under Secretary of Defense
(Logistics & Materiel Readiness)



Nancy Spruill 12/9/08
Director, Acquisition Resources
and Analysis

Attachments:
As stated

cc:
VCJCS
DUSD(A&T)
Director, PA&E
Director, ARA
Chairman, OSD CAIG



ACQUISITION,
TECHNOLOGY
AND LOGISTICS

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

JUL 8 1 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

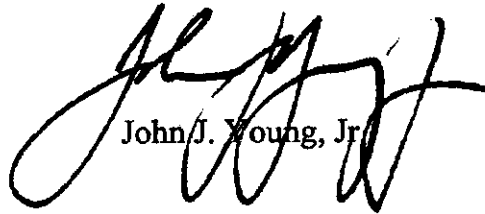
Currently, acquisition documentation does not ensure the integration of acquisition and sustainment processes in a life cycle framework. In addition to establishing life cycle metrics early in the acquisition process, it is necessary to track and monitor progress in achieving these metrics through the 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.



DEPUTY UNDER SECRETARY OF DEFENSE FOR
LOGISTICS AND MATERIEL READINESS
3500 DEFENSE PENTAGON
WASHINGTON, DC 20301-3500

MAR 10 2007

MEMORANDUM FOR UNDER SECRETARIES OF THE MILITARY
DEPARTMENTS

SUBJECT: Life Cycle Sustainment Outcome Metrics

In July 2006, the Joint Requirements Oversight Council (JROC) established a mandatory warfighter Materiel Readiness/Sustainment Key Performance Parameter (KPP) (Materiel Availability) and identified Material Reliability and Ownership Cost as related Key System Attributes (KSAs) for new acquisitions. Specific definitions of these metrics, as they will appear in the revised Chairman of the Joint Chiefs of Staff Manual (CJCSM) 3170.01C, scheduled for issuance in 1Qtr CY2007, are contained in Attachment 1. Working with your acquisition and logistics offices we have established these KPP/KSA definitions along with a Mean Down Time definition, also provided in the Attachment. Goals for these four materiel readiness outcomes should be established early in the concept decision process, refined throughout the design development process, and then carried through as program baseline goals until system retirement. Status towards these goals should be reported at Program Reviews (DAB, DAES, MRUs, etc).

Additionally, we have at least 14 Life Cycle Sustainment (LCS) "Enablers" (Attachment 2) that tend to be key leverage considerations throughout a program's life cycle. These enablers are important technical and management processes that, when appropriately addressed, positively impact the Materiel Readiness LCS Outcomes. We encourage continuing emphasis on these LCS enablers throughout the weapon system life cycle.

Reporting and use of these outcomes and enablers should begin as soon as practical for all ACAT 1 Acquisition Programs, as well as all major legacy programs currently included in the Defense Readiness Reporting System (DRRS). I request your individual Service Management Information Systems offices work directly with the Defense Acquisition Management Information Retrieval (DAMIR) office to ensure access to this data, with minimal additional workload for the programs. The next revision to DoDI 5000.2 and the Defense Acquisition Guidebook will incorporate the four Materiel Readiness outcome goals and LCS enablers and detailed process for the collection and reporting of these sustainment data items.



The principal point of contact for administration of these Life Cycle Sustainment Metrics is Mr. David V. Pauling, Assistant Deputy Under Secretary of Defense (Materiel Readiness and Maintenance Policy), (703) 697-7980, david.pauling@osd.mil.


Jack Bell

Attachments:

As stated

Cc:

Army Acquisition Executive
Navy Acquisition Executive
Air Force Acquisition Executive
VC, JCS
DUSD(A&T)
Director, AR&A

LIFE CYCLE SUSTAINMENT OUTCOME METRICS

1 MATERIEL AVAILABILITY (Key Performance Parameter (KPP))

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 KPP 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.

Materiel Availability (MA) is a number between 0 and 100 that provides the average percentage of time that the entire population of systems is materially capable for operational* use during a specified period.

$$\text{Materiel Availability} = \frac{\text{Number of End Items Operational}^*}{\text{Total Population of End Items}}$$

Materiel Availability measures the percentage of the entire population that is operational.

* Operational means in a materiel condition such that the end item is capable of performing an identified mission.

2 MATERIEL RELIABILITY (Key System Attribute (KSA))

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 which can be converted to MTBF for use as a KSA. (e.g. 95% probability of completing a 12 hour mission, free from mission-degrading failure; 90% probability of completing 5 sorties without failure, etc.) 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.

Materiel Reliability = Mean Time Between Failure

Materiel Reliability =
$$\frac{\text{Total Operating Hours}}{\text{Total Number of Failures}}$$

3 OWNERSHIP COST (Key System Attribute (KSA))

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 lifecycle timeframe, consistent with the timeframe used in the Materiel Availability KPP. 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.

Ownership Cost = O&S costs* associated with Materiel Readiness

- * Using the CAIG O&S Cost Estimating Structure Selected cost elements:
 - 2.0 Unit Operations (2.1.1 (only) Energy (Fuel, POL, Electricity))
 - 3.0 Maintenance (All)
 - 4.0 Sustaining Support (All except 4.1, System Specific Training)
 - 5.0 Continuing System Improvements (All)

4 MEAN DOWN TIME

Mean Downtime (MDT) is the average Total Downtime required to restore an asset to its full operational capabilities. MDT includes the time from reporting of an asset being down to the asset being given back to operations / production to operate. MDT includes administrative time of reporting, logistics and materials procurement and lock-out/tag-out of equipment, etc. for repair or preventive maintenance.

$$\text{Mean Down Time (MDT)} = \frac{\text{Total Down Time for All Failures}}{\text{Total Number of Failures}}$$

LIFE CYCLE SUSTAINMENT ENABLERS

Defense Acquisition University (DAU) References and Information Links

1. PERFORMANCE BASED LOGISTICS (PBL)

- DAU Acquisition Community Connection (ACC) PBL Site <https://acc.dau.mil/CommunityBrowser.aspx?id=18074>
- DAU Acquisition Community Connection (ACC) PBL Toolkit <https://acc.dau.mil/CommunityBrowser.aspx?id=22482>
- DAU Acquisition Community Connection (ACC) Sustainment Site <https://acc.dau.mil/CommunityBrowser.aspx?id=18073>

2. CORROSION PREVENTION

- DAU Acquisition Community Connection (ACC) Corrosion Prevention & Control Site <https://acc.dau.mil/CommunityBrowser.aspx?id=32446>

3. ITEM UNIQUE IDENTIFICATION (IUID)/SERIALIZED ITEM MANAGEMENT (SIM)

- DAU Acquisition Community Connection (ACC) Item Unique Identification (IUID) Special Interest Area (SIA) <https://acc.dau.mil/iuid>

4. TECHNICAL DATA/IETM

- DAU Acquisition Community Connection (ACC) Interactive Electronic Technical Manuals (IETM) Site <https://acc.dau.mil/CommunityBrowser.aspx?id=22427>
- DAU Acquisition Community Connection (ACC) Data Management (DM) Community of Practice (COP) <https://acc.dau.mil/dm>

5. CONDITION BASED MAINTENANCE (CBM+)

- DAU Acquisition Community Connection (ACC) Condition Based Maintenance (CBM+) Site
<https://acc.dau.mil/CommunityBrowser.aspx?id=32444>

A. PROGNOSTICS & DIAGNOSTICS

- DAU Acquisition Community Connection (ACC) Prognostics and Health Management (PHM) and Advanced Diagnostics Site
<https://acc.dau.mil/CommunityBrowser.aspx?id=128766>

B. RELIABILITY CENTERED MAINTENANCE

- DAU Acquisition Community Connection (ACC) Reliability Centered Maintenance (RCM) Site
<https://acc.dau.mil/CommunityBrowser.aspx?id=111386>

6. CONTINUOUS PROCESS IMPROVEMENT (CPI)

- DAU Acquisition Community Connection (ACC) Continuous Process Improvement (CPI) Site
<https://acc.dau.mil/CommunityBrowser.aspx?id=22426>

7. TITLE 10 REQUIREMENTS/ 50/50, Partnering

50/50

- DAU Acquisition Community Connection (ACC) Depot Level Maintenance (Title Ten Requirements and 50/50) Site
<https://acc.dau.mil/CommunityBrowser.aspx?id=32452>

Partnering

- DAU Acquisition Community Connection (ACC) Public-Private Partnerships (PPP) Site
<https://acc.dau.mil/CommunityBrowser.aspx?id=22413>

8. DEPOT MAINTENANCE PLAN

- DAU Acquisition Community Connection (ACC) Depot Level Maintenance Site <https://acc.dau.mil/CommunityBrowser.aspx?id=32452>

9. **DIMINISHING MANUFACTURING SOURCES AND MATERIAL SHORTAGES (DMSMS)/OBSCOLESCENCE PLAN**

- DAU Acquisition Community Connection (ACC) Diminishing Manufacturing Sources and Material Shortages (DMSMS) Site <https://acc.dau.mil/CommunityBrowser.aspx?id=32245>
- DAU Acquisition Community Connection (ACC) Aging Systems Site <https://acc.dau.mil/CommunityBrowser.aspx?id=22415>
- DAU Acquisition Community Connection (ACC) Obsolescence Management Site <https://acc.dau.mil/CommunityBrowser.aspx?id=32247>
- DAU Acquisition Community Connection (ACC) Continuous Modernization Site <https://acc.dau.mil/CommunityBrowser.aspx?id=32248>
- DAU Acquisition Community Connection (ACC) Technology Insertion Site <https://acc.dau.mil/CommunityBrowser.aspx?id=32703>
- DAU Acquisition Community Connection (ACC) Lead Free Electronics/Solder Site <https://acc.dau.mil/CommunityBrowser.aspx?id=32257>

10. **TRAINING**

- DAU Acquisition Community Connection (ACC) Training and Training Support Site at <https://acc.dau.mil/CommunityBrowser.aspx?id=32726>

11. **INTEGRATED SUPPLY CHAIN MANAGEMENT (SCM)**

- DAU Acquisition Community Connection (ACC) Supply Chain Management (SCM) Site <https://acc.dau.mil/CommunityBrowser.aspx?id=22412>

12. RADIO FREQUENCY IDENTIFICATION (RFID)

- DAU Acquisition Community Connection (ACC) Radio Frequency Identification (RFID) Site
<https://acc.dau.mil/CommunityBrowser.aspx?id=22423>

13. PREDICTIVE MODELING

- DAU Acquisition Community Connection (ACC) Systems Engineering Modeling and Simulation (M&S) Site
<https://acc.dau.mil/CommunityBrowser.aspx?id=19343>

14. LONG TERM PERFORMANCE BASED AGREEMENTS (PBA)

- DAU Acquisition Community Connection (ACC) Performance Based Agreements (PBA) Site <https://acc.dau.mil/CommunityBrowser.aspx?id=46649>
- DAU Acquisition Community Connection (ACC) PBL Toolkit Performance Based Agreements (PBA) Site
<https://acc.dau.mil/CommunityBrowser.aspx?id=32525>

LCS Metrics Data Structure and Definitions

1. Materiel Availability

Input Directions: Materiel Availability is a number between 0 and 100 that provides the average percentage of time that the entire population of systems is materially capable for operational* use during a specified period.

$$\text{Materiel Availability} = \frac{\text{Number of End Items Operational}^*}{\text{Total Population of End Items}^{**}}$$

Materiel Availability measures the percentage of the entire population that is operational.

* Operational means in a materiel condition such that the end item is capable of performing an identified mission.

** This does not include systems in long term or terminal storage.

1st Field: Original Baseline Goal –Acquisition programs that are post Milestone B should create this baseline using established readiness requirements in conjunction with the Materiel Availability definition. Once entered, this field will not change. Any changes to the baseline (including Milestone B) will be reflected in the 2nd field.

2nd Field: Current Baseline Goal – For programs entering this field the first time, this will be the same as the Original Baseline Goal.

3rd Field: Current Estimate.

4th Field: Description of how Materiel Availability is calculated. Programs should cite the document and date of document this metric is derived from.

2. Materiel Reliability

Input Directions: Materiel Reliability = Mean Time Between Failure (MTBF)

$$\text{Materiel Reliability} = \frac{\text{Total Operating Hours}}{\text{Total Number of Failures}}$$

1st Field: Original Baseline Goal –Acquisition programs that are post Milestone B should create this baseline using established readiness requirements in conjunction with the Materiel Reliability definition. Once entered, this field will not change. Any changes to the baseline (including Milestone B) will be reflected in the 2nd field.

2nd Field: Current Baseline Goal – For programs entering this field the first time, this will be the same as the Original Baseline Goal.

3rd Field: Current Estimate.

4th Field: Description of how Materiel Reliability is calculated. Programs should cite the document and date of document this metric is derived from.

3. Ownership Cost

Input Directions: Ownership Cost = Operations & Support (O&S) costs* associated with Materiel Readiness

- * Using the CAIG O&S Cost Estimating Structure Selected cost elements:
 - 2.0 Unit Operations (2.1.1 (only) Energy (Fuel, POL, Electricity))
 - 3.0 Maintenance (All)
 - 4.0 Sustaining Support (All except 4.1, System Specific Training)
 - 5.0 Continuing System Improvements (All)

Programs can use either the 1992 or 2007 CAIG cost estimate definition.

1st Field: Original Baseline Goal Acquisition programs that are post Milestone B should create this baseline using established readiness requirements in conjunction with the Ownership Cost definition. Once entered, this field will not change. Any changes to the baseline (including Milestone B) will be reflected in the 2nd field.

2nd Field: Current Baseline Goal – For programs entering this field the first time, this will be the same as the Original Baseline Goal.

3rd Field: Current Estimate

4th Field: Description of how O&S total was arrived at along with narrative of any changes throughout the lifecycle and the reasons behind them. Programs should cite the document and date of document this metric is derived from.

4. Mean Down Time

Input Directions: Mean Down Time =
$$\frac{\text{Total Down Time for All Failures}}{\text{Total Number of Failures}}$$

1st Field: Original Baseline Goal – Acquisition programs that are post Milestone B should create this baseline using established readiness requirements in conjunction with the Mean Down Time definition. Once entered, this field will not change. Any changes to the baseline (including Milestone B) will be reflected in the 2nd field.

2nd Field: Current Baseline Goal – For programs entering this field the first time, this will be the same as the Original Baseline Goal.

3rd Field: Current Estimate.

4th Field: Description of how Mean Down Time was calculated along with any supporting information regarding major contributing causes for down time. Programs should cite the document and date of document this metric is derived from.

| Life Cycle Sustainment Input Sheet Template | | | | | | Program: | |
|---|------------------------------|------------------------|------|-----------------------|------|--------------------------------|--|
| | | | | | | PNO #: | |
| Date: | Metric | Original Baseline Goal | Date | Current Baseline Goal | Date | Current Estimate/ Actual Data* | Description of how value is calculated |
| | Material Availability | | | | | | |
| | Material Reliability | | | | | | |
| | Ownership Cost | | | | | | |
| | Mean Down Time | | | | | | |

*Actual data used once system is fielded

Date Format: Jun-08
 \$ Format: \$145.26M
 Time Format: 18.6 hrs