Implementing A Life Cycle Management Framework

Presented to the

2009 LOGSA – CLEP
Life Cycle Logistics Tools Workshop
& Users Group Conference
Huntsville, Alabama USA

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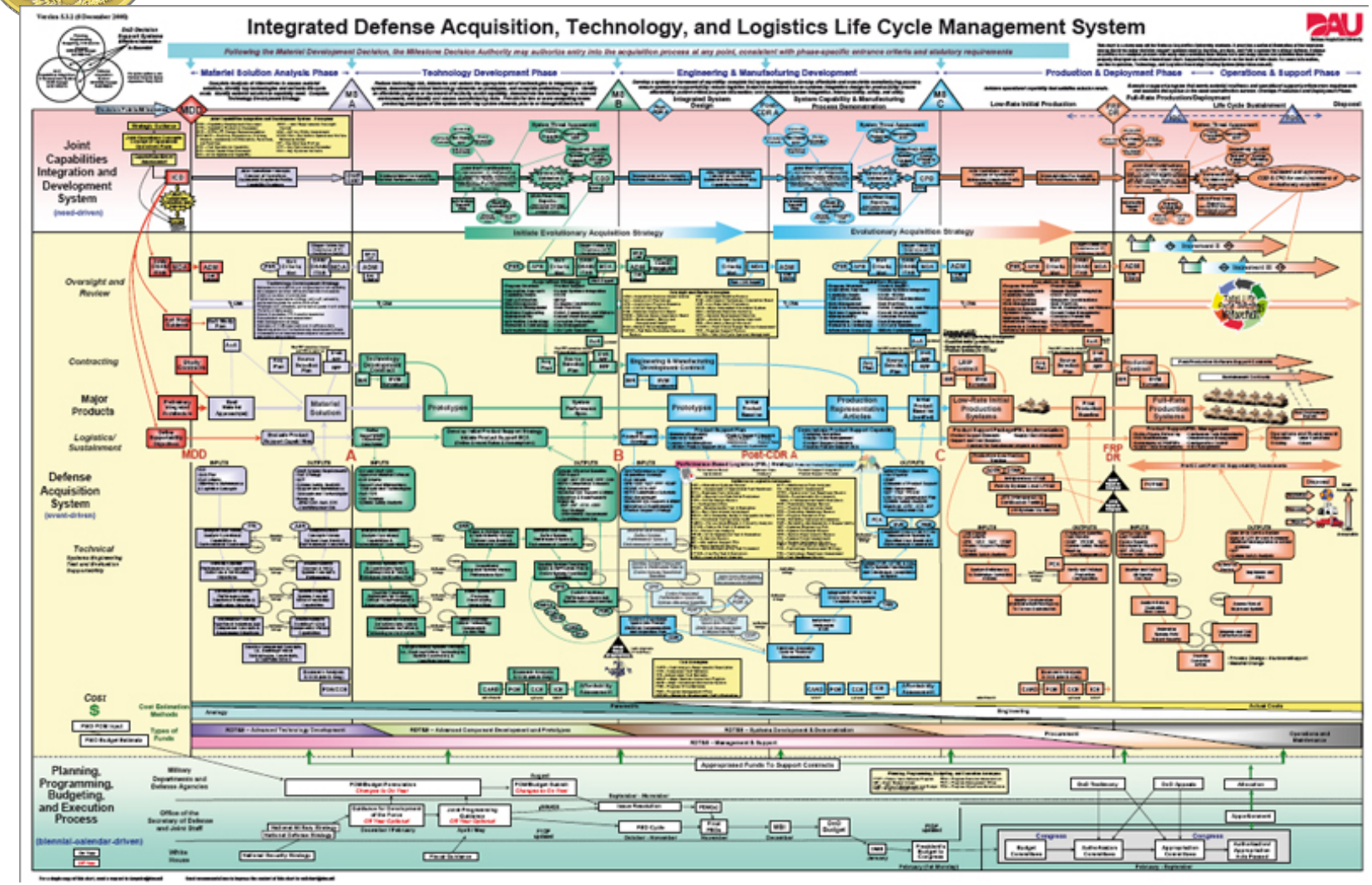
Agenda

- Problem Statement
- Defining The Life Cycle Management Framework
- Implementation Activities / Status
- Path Ahead
- Conclusions & Recommendations

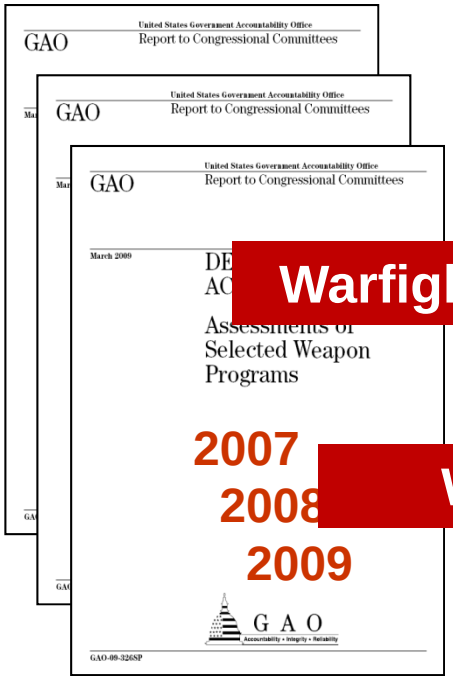
AT&L Integrated Framework Chart



Source: DAU 5000.02 Rapid Deployment Training

What is the Problem?

Capabilities Are Not Being Delivered



- **96 of 144 MDAPs Exceed Baselines**
  - 22 Months Average Delay
  - $296B in Estimated Acquisition Cost Growth

Warfighters Are Being Denied Needed Capabilities

  - 25% Change in Total Acquisition Cost

What Could We Buy With The $296B?

- **Reasons**
  - Unrealistic Cost Estimates / Budget Instability
  - Optimistic Schedules And Assumptions
  - Unstable Requirements / Immature Technology / Design
- **Potential Outcomes**
- Program Restructuring / Cancellation
- Loss of Taxpayer Confidence

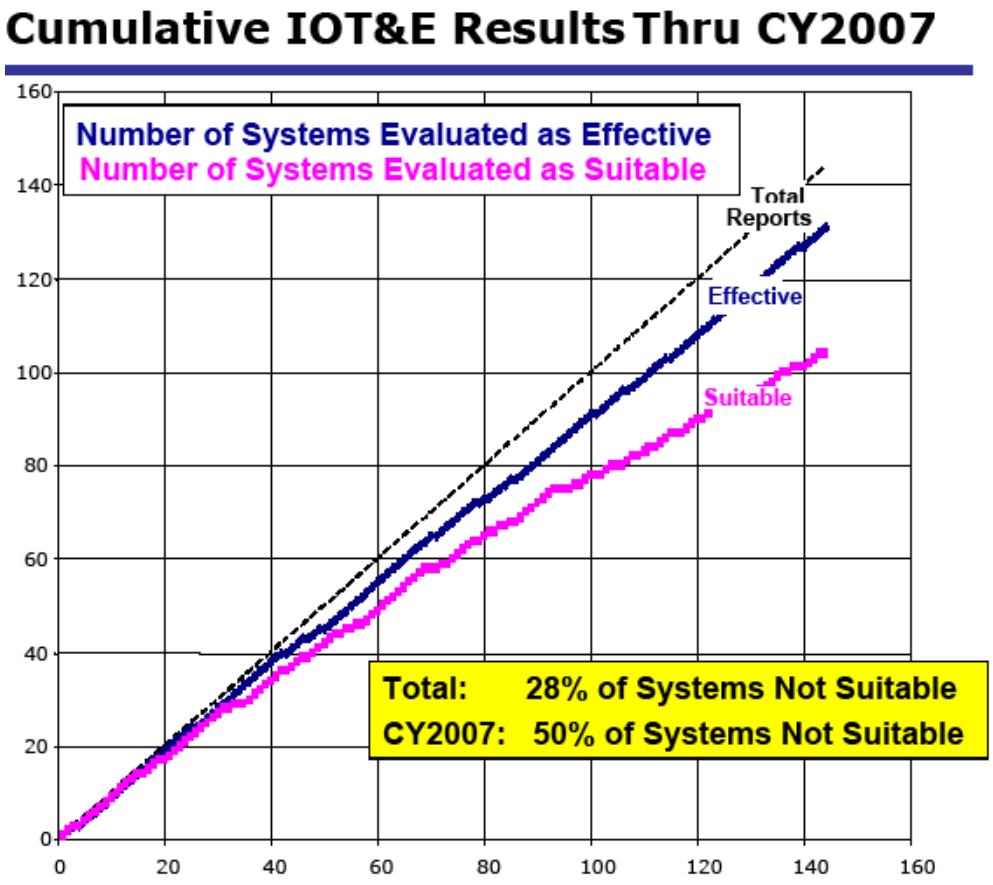
What is the Problem?

Suitability Is Decreasing

- **Defense Science Board Task Force on Developmental Test & Evaluation**

"Operational effectiveness is the overall degree of mission **accomplishment of a** system when used by representative personnel in the environment planned or expected for operational employment of the system considering organization, doctrine, survivability, tactics, vulnerability and threat.

"Operational suitability is the degree to which a system can be satisfactorily placed in field use, with consideration given to reliability, availability, compatibility, transportability, interoperability, wartime usage rates, maintainability, safety, human factors, manpower supportability, logistics supportability, documentation, training requirements, and natural environmental effects and impacts.



What is the Problem?

Skills Have Been Lost (Or Abdicated)

- **Unintended Consequences of Acquisition Reform**
  - COTS "Syndrome"

    "Someone's already done the engineering."

    "It's COTS! What can we do about it?"

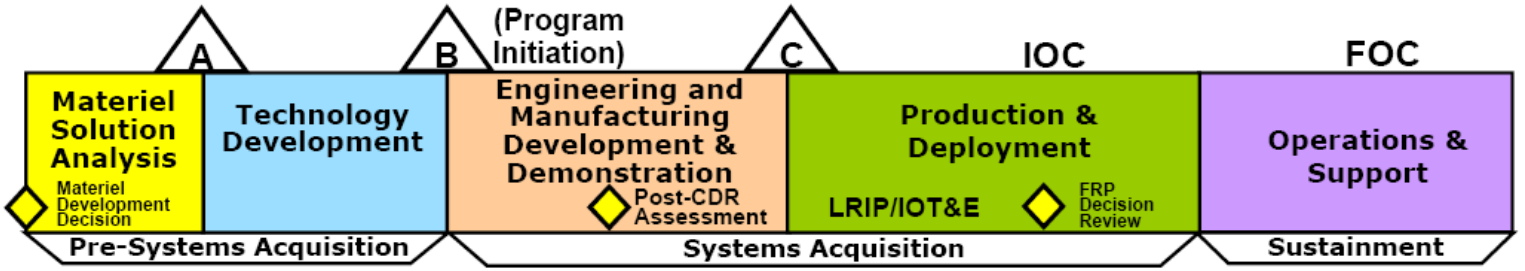
    "We Don't Have MIL Standards Anymore'"
- **Workforce Cuts in the 90's due to the "Peace Dividend"**
  - Loss of Critical Manpower
  - Loss of Critical RAM Skills
- **Poor Practices**
  - Lack Of Robust Systems Engineering Process
  - Loss Of Focus On Reliability Growth Discipline
  - Delayed Incorporation Of Fixes Due To Program Constraints

"We Took Our Eye Off The Ball"

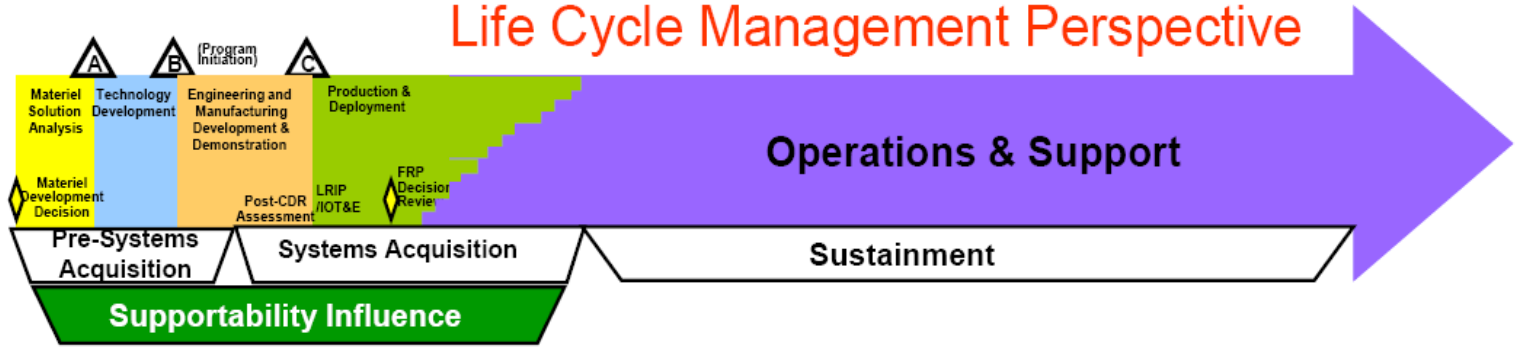
What is the Problem?

Traditional Perspectives Are Entrenched

Traditional Acquisition Perspective



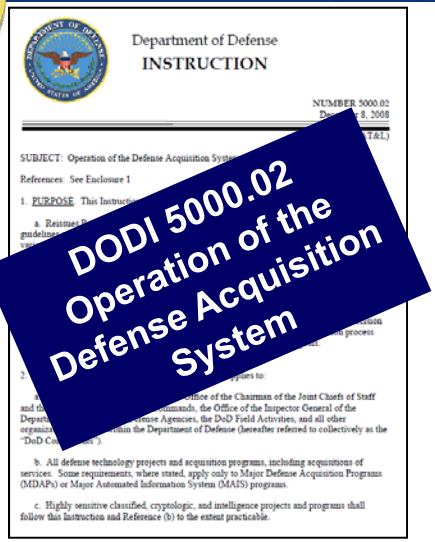
Life Cycle Management Perspective



65-80% of Life Cycle Costs are During the O&S Phase

70% of Total Ownership Cost is Designed in by Milestone B

DoD Initiatives and Policy


Department of Defense
INSTRUCTION

NUMBER 5000.02

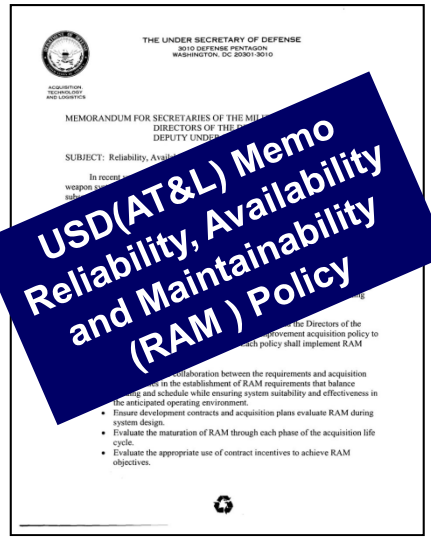
SUBJECT: Operation of the Defense Acquisition System

References: See Enclosure 1

1. PURPOSE

DODI 5000.02 Operation of the Defense Acquisition System

USD(AT&L) Strategic Goals Implementation Plan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3010 DEFENSE PENTAGON
WASHINGTON, DC 20301-3010

MEMORANDUM FOR SECRETARIES OF THE MILI
DIRECTORS OF THE
DEPUTY UNDE

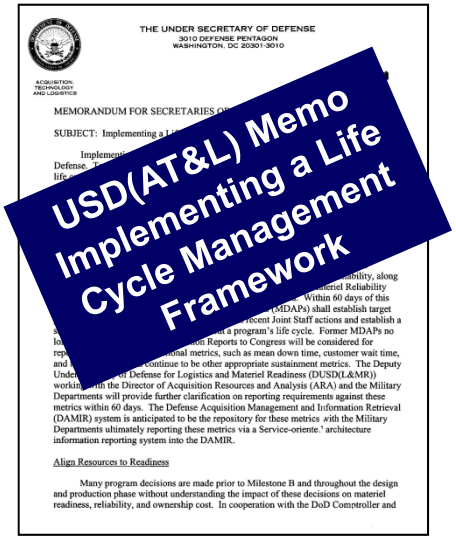
SUBJECT: Reliability, Availa

USD(AT&L) Memo Reliability, Availability and Maintainability (RAM) Policy


CHAIRMAN OF THE JOINT CHIEFS OF STAFF INSTRUC

J-8
DISTRIBUTION

CJCSI 3170.01 Joint Capabilities Integration and Development System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MEMORANDUM FOR SECRETARIES OF

SUBJECT: Implementing a Li

USD(AT&L) Memo Implementing a Life Cycle Management Framework

USD(AT&L) Strategic Goals Implementation Plan

1. High-performing, Agile, and Ethical Workforce
2. Strategic and Tactical Acquisition Excellence
3. Focused Technology to Meet Warfighting Needs
4. Cost-Effective Joint Logistics Support for the Warfighter
5. Reliable and Cost-Effective Industrial Capabilities Sufficient to Meet Strategic Objectives
6. Improved Governance and Decision Processes
7. Capable, Efficient, and Cost-effective Installations

Goal 4 – Cost Effective Joint Logistics Support

- **TASK 4.1**
  The integration of Life Cycle Management Principles into DoD and Service Acquisition and Sustainment Processes
  - Incorporation Of Readiness Requirements
  - Outcome-based Performance
  - Contract Provisions Into Life Cycle Standards
  - Full Integration Into Acquisition Milestone Compliance starting with Milestone A
  - Legacy (Post Production) Materiel Readiness Sustainment

USD(AT&L) LCM Framework Memo

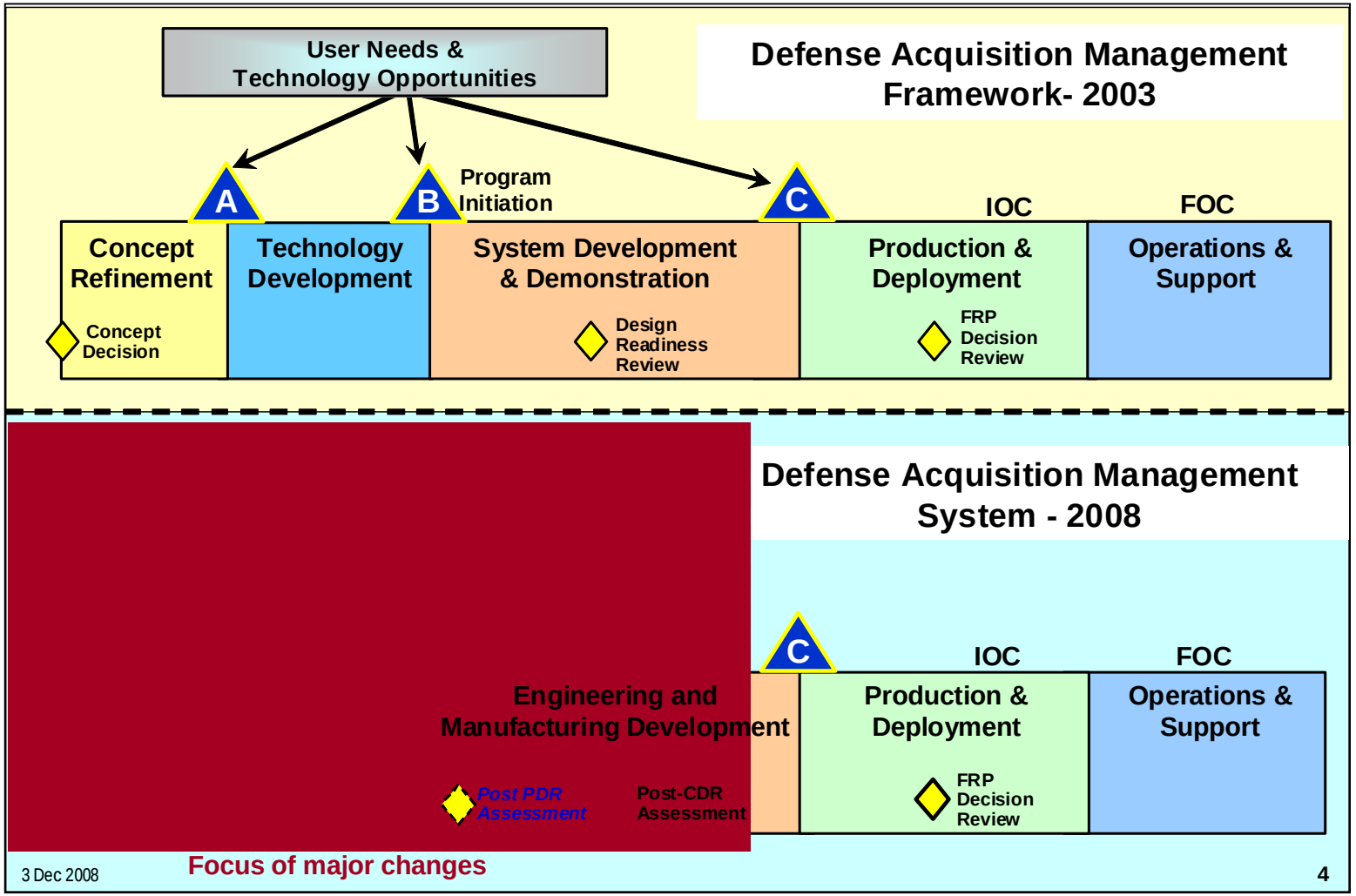
- **Objective:**
  - Seamless Integration of Acquisition and Life Cycle Sustainment Policies
- **Strategy and Direction**
  - Reinforce Life Cycle Sustainment Metrics
  - Align Resources to Readiness
  - Track Performance Throughout the Life Cycle
  - Implement Performance Based Life Cycle Product Support Strategies
- **Applicability**
  - All Major Defense Acquisition Programs (MDAP)

LCM Implementation Tasks

Reinforce Life Cycle Sustainment Metrics

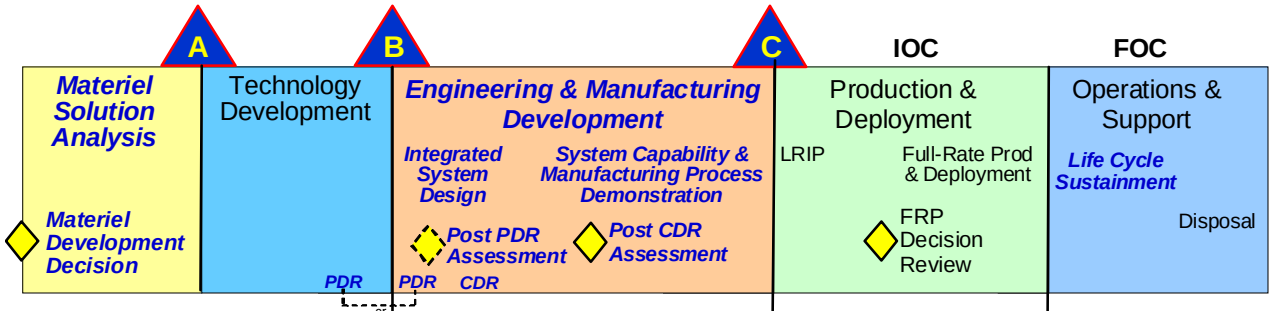
- DoDI 5000.02 shall reflect Life Cycle Management (LCM) requirements and processes **DEC 08**
- Acquisition Strategy (AS) and Acquisition Program Baseline (APB) documents shall reflect a Life Cycle Management (LCM) focus
  - Inclusion of the Life Cycle Sustainment Plan (LCSP) within the Acquisition Strategy **FEB 10**
- Systems and Software Engineering (SSE) Processes and Plans shall be strengthened to reflect a LCM principles
  - Revised Systems Engineering Plan Prep Guide **AUG 08**
  - Revised Program Support Review (PSR) Process/Methodology **AUG 08**
  - Preparation of the Reliability, Availability Maintainability – Cost (RAM-C) Handbook **JUN 09**

Restructured Life Cycle Phases



Source: DAU 5000.02 Rapid Deployment Training

Process Changes / Logistics Impacts



Phase/Event	Activities	Impact on Logistics
Materiel Development Decision	• Mandatory Entry Point for all Programs • AoA Guidance Approved	• Early Assessment of Design and Sustainment Characteristics
	• AoA Plan / AoA Completed	Integrated into the Design Process
Technology Development	• CDD / Acquisition Strategy / SEP / TEMP • Competitive Prototypes Demonstrated	• Sustainment KPP/KSAs quantified • Early Systems Engineering Studies
		• RAM Growth Tested and Evaluated
Engineering & Manufacturing Development (EMD) • *Integrated System Design*	• Production Baseline Established • Manufacturing Processes Demonstrated • Production Representative Articles	• Enhanced Product Support Planning • Verification of System's Ability to Meet Sustainment Requirements
Life Cycle Sustainment	• Approved CPD / LCSP • Performance Based Life Cycle Product Support	• Achieved Materiel Availability • Reduced Total Cost of Ownership

Increased Focus On the Systems Engineering (SE) Process

Inclusion of Sustainment/Supportability Within SE Processes

Integration of Sustainment Metric KPP/KSA into Requirements

New Sustainment Requirements

- **Sustainment Key Performance Parameters (KPP) and Key System Attributes (KSA) Included in Critical Program Documentation/Activities**
  - Analysis of Alternatives (AoA) Plan/Guidance
  - Acquisition Strategy / Acquisition Program Baseline
  - Program Support Reviews
    - Integrated Logistics Assessment (ILA)
  - Assessment of Operational Test Readiness (AOTR)
    - Logistics Readiness Review (LRR)

Integration of Sustainment Metric KPP/KSA into Requirements

New Sustainment Requirements

- **Documentation Required to Support Program Activities and Milestone Decisions**
  - Replaced System Sustainment Plan
  - Life Cycle Sustainment Plan
  - Data Management Strategy
  - RAM Program Plan / Reliability Growth Plan
  - Item Unique Identification (IUID) Implementation Plan
  - Corrosion Plan
  - Military Equipment Valuation
  - Configuration Steering Boards
  - Contracting for Operational Support Services

LCM Implementation Tasks

- **Align Resources to Readiness**
  - Pilot Programs shall be established to link financial resources to Sustainment Metric Performance **NOV 08**
  - Modeling and Simulation (M&S) Tools shall be used to define and evaluate Sustainment Requirements **OCT 10**

DAMIR Life Cycle Sustainment Input Template

Metric	Original Baseline Goal	Date	Current Baseline Goal	Date	Current Estimate / Actual Data	Description Of How Value Is Calculated
Materiel Availability	75.6%	Aug-08	78.3%	Jan-09	74.8%	The Materiel Availability definition is calculated by taking the projected fleet total of F/A-XX aircraft and identifying the percentage of aircraft available to perform a mission at a given time
Materiel Reliability	55.0 hrs	Aug-08	58.5 hrs	Jan-09	49.6 hrs	Materiel Reliability is derived from the total operating hours over failures resulting in a non-mission capable designation for the entire fleet during a year's time period
Ownership Cost	$10.65B	Aug-08	$11.47B	Jan-09	$11.32B	Ownership cost is calculated by totaling the specific cost elements from the CAIG O&S cost estimating structure across the entire lifecycle for the entire fleet
Mean Down Time	4.5 hrs	Aug-08	4.0 hrs	Jan-09	6.2 hrs	Mean Down Time is the average time to restore an F/A-XX to fully operational status. It is derived by taking the total down time for all failures and dividing it by the total amount of failures

LCM Implementation Tasks

- **Implement Performance-Based Life Cycle Product Support Strategies**
  - Strengthen discussion of PBL procedures in the Defense Acquisition Guide (DAG) **JUN 09**
  - MDAPs reflect PBL approaches in sustainment planning
    - Assessment by L&MR as part of SSE Program Support Reviews **AUG 08**
  - Product Support Assessment Team (PSAT) **SEP 09**

LCM Implementation Tasks

- **Track Performance Throughout the Life Cycle**
  - All MDAPs shall establish target goals for Sustainment Metrics **SEP 09**
  - DAMIR will be the medium for Sustainment Metrics Reporting **FEB 10**
  - MDAPs report against metrics at program reviews **FEB 10**
  - Governance of Legacy systems shall include Post-IOC reviews **OCT 10**

Path Ahead – What is Success?

- **Full Incorporation of LCM Principles Into The Mainstream Of "Big A" Acquisition And Sustainment Processes And Decisions**
  - **Total Life Cycle Systems Management (TLCSM)**
  - **Governance Processes Equating Cost, Schedule, Performance & Sustainment**
  - **Full Inclusion of Sustainment into Requirements**
  - **Revitalized Systems Engineering – Logistics Engineering Interface to Influence Design "Up-Front"**
  - **Reduction in Total Cost of Ownership**

Conclusions & Recommendations

- **LOGSA's Logistics Tools are an integral part of the Life Cycle Management Framework**
  - **CASA**
  - **COMPASS**
  - **powerLOG-J,**
  - **SYSPARS**

- **Defense Acquisition University – LOGSA Partnership**
  - **LOG 210 – Supportability Manager's Tools Course**

Class	Date	Location
Class 09-002	29 June - 1 Jul 09	DAU Southern Region Huntsville, AL

Q & A

"Implementing A Life Cycle Management Framework"

Thank You

For The Opportunity to Support The

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