



# ***Acquisition Life Cycle Cost Management & Product Support Business Case Analyses***

**Desiree Seaward and Joseph “Colt” Murphy  
Office of Logistics & Materiel Readiness**

**[Desiree.seaward@osd.mil](mailto:Desiree.seaward@osd.mil) and [Joseph.murphy@osd.mil](mailto:Joseph.murphy@osd.mil)**

**703-697-1368 and 571-256-7069**

**3 November 2011**



# Overview

---

- Product Support Background
  - Assessments of DOD Product Support Actions
  - Product Support Strategy
  - Product Support Business Model
- Current Picture of Product Support Costs
  - Affordability
  - O&S Cost Management
  - Data, VAMOS, Processes/BCA, Reporting SARS/Quad Chart
  - AT&L Will Cost/Should Cost
- Product Support BCA Guidebook
  - Definition
  - Structure
  - Delivery
  - Other considerations



# Overview

---

- **Product Support Background**
  - Assessments of DOD Product Support Actions
  - Product Support Strategy
  - Product Support Business Model
- **Current Picture of Product Support Costs**
  - Affordability
  - O&S Cost Management
  - Data, VAMOS, Processes/BCA, Reporting SARS/Quad Chart
  - AT&L Will Cost/Should Cost
- **Product Support BCA Guidebook**
  - Definition
  - Structure
  - Delivery
  - Other considerations



# Findings from GAO Report-December 2008

---

- "29 PBLs examined (9 USA, 10 DON, 10 USAF)
  - Most of the Services have not established internal controls necessary to ensure a comprehensive assessment...many inconsistencies across the Services guidance.
  - In general, BCAs were either not done, not fully documented, or were not comprehensive or sound
  - Almost all costs were either difficult to verify/validate or trace back to sound accounting data"

***Consistent theme among many previous and current GAO studies***



# 2009 DoD Weapon System Acquisition Reform: Product Support Assessment (PSA)

## Product Support Business Model:

Provide Program Managers a model template for a weapon system support strategy that drives cost-effective performance and capability for the Warfighter across the weapon system life cycle and enables most advantageous use of an integrated defense industrial base

## Industrial Integration Strategy:

Align and expand the collaboration between Government & Industry that produces best value partnering practices

## Supply Chain Operational Strategy:

Connect platform product support strategies to enterprise supply chain approaches that produces best value across the DoD components

## Governance:

Strengthen and develop organization and mgmt processes to deliver the right sustainment information to decision-makers

## Analytical Tools:

Build a toolbox of analytical approaches (including BCA)

## Metrics:

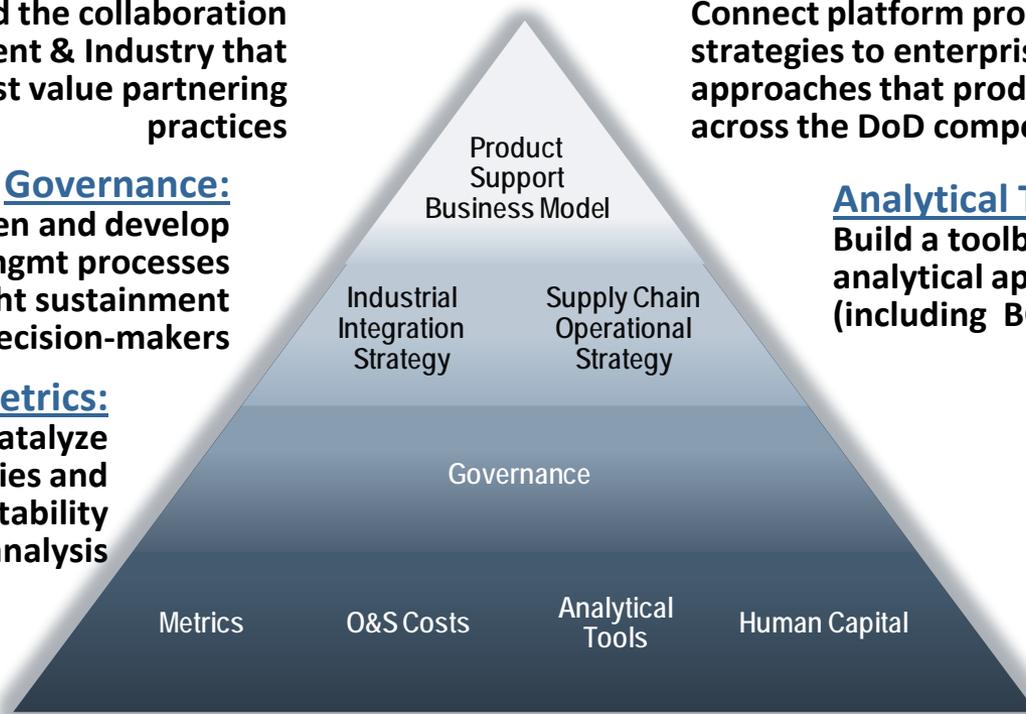
Use existing metrics to catalyze sustainment strategies and trigger continuous supportability analysis

## Human Capital:

Integrate Product Support competencies across the Logistics and Acquisition workforce domain to institutionalize successful traits of an outcome-based culture

## O&S Costs:

Improve O&S cost visibility and influence



## Weapons System Data:

Define, collect, report, and manage the data we need to drive effective Life Cycle Product Support



# Product Support Manager

---

- **Product Support Strategy**
  - The business model of an integrated system
  - Balance across functional areas and stakeholders
  - Evolutionary process develops the strategy
- **Congressional influences on the Strategy**
  - Required governmental position with responsibility
  - Improved credibility and transparency of data and decision making
  - Directive in governing frequency and supporting documentation of decision making
    - NDAA 2010 Section 805, WSARA 2009

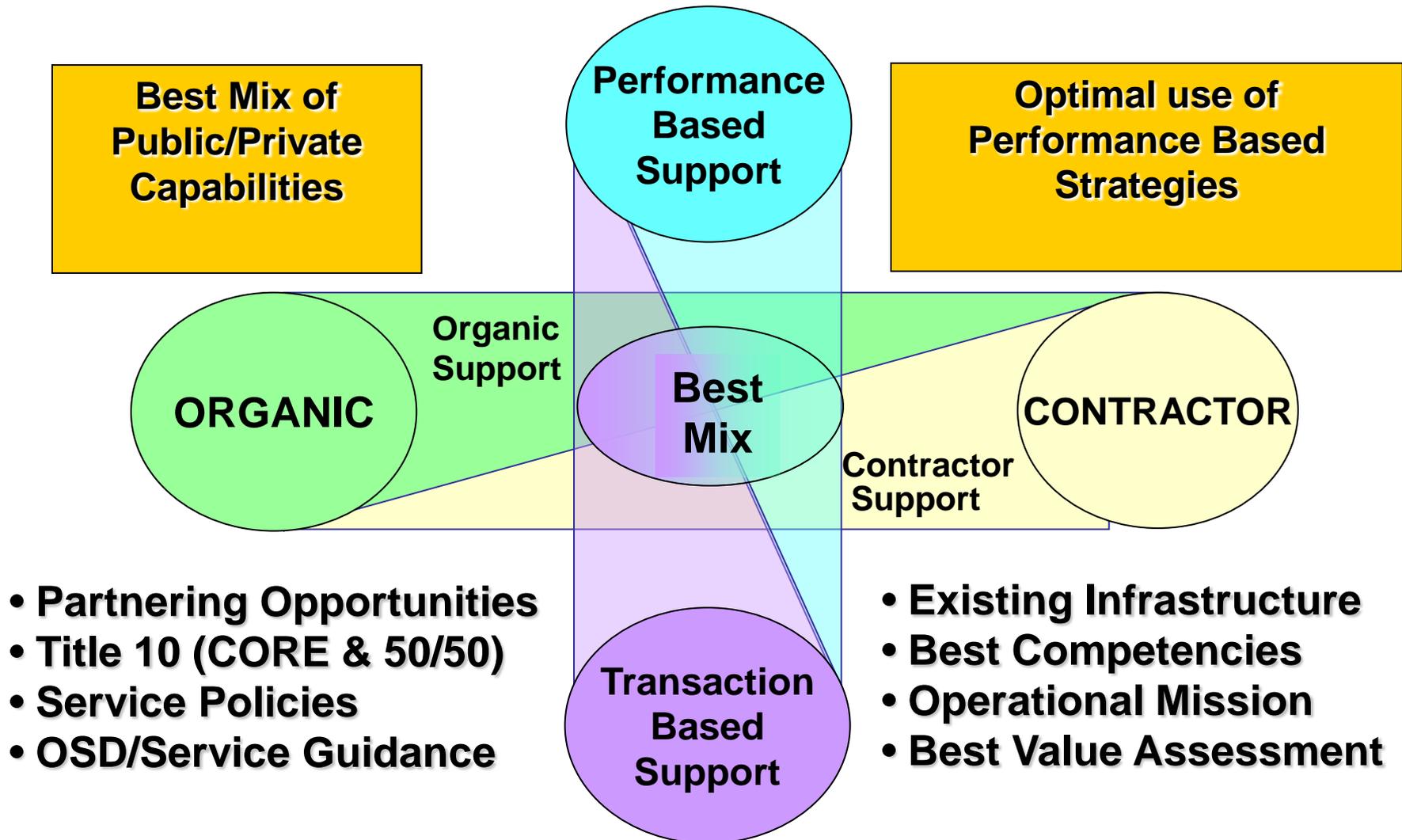


# DoD Product Support Strategy Process





# Analysis of support and strategy options





# Product Support Decision Matrix

**Weapons System Strategy**

Platform	<b>1.1</b> <i>Industry-Centric Platform Strategy</i> (Example: C-12 Huron)	<b>1.2</b> <i>Blended DoD-Industry Platform Strategy</i> (Example: C-17)	<b>1.3</b> <i>DoD-Centric Platform Strategy</i> (Example: Common Ground System)
	<b>2.1</b> <i>Industry-Centric Subsystem Strategy</i> (Example: HIMARS)	<b>2.2</b> <i>Blended DoD-Industry Subsystem Strategy</i> (Example: APU)	<b>2.3</b> <i>DoD-Centric Subsystem Strategy</i> (Example: M119-A2 Howitzer)
	<b>3.1</b> <i>Industry-Centric Component Strategy</i> (Example: Military Tires)	<b>3.2</b> <i>Blended DoD-Industry Component Strategy</i> (Example: USAF IPV)	<b>3.3</b> <i>DoD-Centric Component Strategy</i> (Example: War Reserve, Contingency Stock)
	Industry Capabilities	Partnerships	Organic Capabilities

**Integration Strategy**



# Overview

---

- Product Support Background
  - Assessments of DOD Product Support Actions
  - Product Support Strategy
  - Product Support Business Model
- Current Picture of Product Support Costs
  - Affordability
  - O&S Cost Management
  - Data, VAMOSOC, Processes/BCA, Reporting SARS/Quad Chart
  - AT&L Will Cost/Should Cost
- Product Support BCA Guidebook
  - Definition
  - Structure
  - Delivery
  - Other considerations



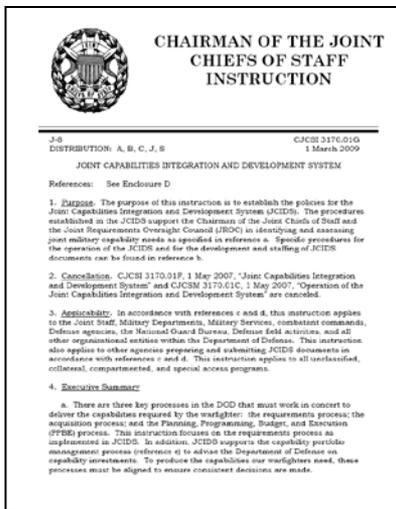
# Affordability Task Force

## ❑ 1.1.4.1 Update Ownership Costs Key System Attribute (KSA)

- Joint Staff opened up JCIDS manual for revision in October 2010
- L&MR led O&S cost team driving O&S cost terminology and definitions into JCIDS revision
  - Concurrence received from JCIDS review board, November 10, 2010

## 1.1.4.2 Standardize O&S Cost estimation methods and tracking

- O&S PSAT team mapping O&S Cost management across life cycle
  - Identify gaps and redundancies across to ensure consistency of data sources
  - Vet new metrics (to include average annual O&S cost per unit)
- O&S Cost team is working with CAPE for consistency and buy-in
  - New definitions, methods, and Cost Element structure issued by CAPE (2011 update to O&S Cost Analysis Guide)
  - Historical data and estimates performed by CAPE (technical expertise)
  - O&S Cost Management Guidebook led by AT&L and the Joint Community (decision making and Life Cycle Management)





# Affordability – Better Buying Power

- AT&L memo, Nov 2010
  - Affordability is a requirement and treated the same as a Key Performance Parameter
  - Imposed affordability constraints on new starts
- Affordability target is presented with analysis
  - Provide target assessments across a portfolio
  - Evaluate mission areas associated with the program
  - Targets are incorporated into Milestone reviews, ADMs, and APBs



# O&S Cost Management Guidebook

---

- Provide O&S Cost transparency for decision makers on O&S activities containing cost ramifications
- Department wide standardization of O&S Cost metrics usage, nomenclature, and Life Cycle Product Support Management processes
- Bridge the gap between the cost, budget, and acquisition communities
- Improve ability of sustainment planners to use O&S costs in product support decision making

**The technical discussion for cost analysts will be in a separate  
CAPE O&S Cost Analysis Guide**



# Uses of O&S Costs in Management Decisions

---



- **Milestone A**

- Enhanced visibility of cost drivers
- O&S Cost estimates support trade-off studies and AOA's

- **Milestone B**

- Influence system design – logistics engineering investments
- Product Support Strategy Business Case Analyses
- Established baselines for future assessments, BCA revalidations

- **Milestone C**

- Track and assess cost drivers relative to benchmarks
  - Early use of T&E data to identify sustainability shortfalls
- Foundation for budgetary requirements for manpower and O&M



# Uses of O&S Costs in Management Decisions

---



- **FRP DR**

- Track and assess cost drivers relative to benchmarks
  - Use of O&S Cost actuals
- Refine the Product Support Strategy and budget requirements

- **Post-IOC**

- Assess and Manage O&S Costs for legacy systems
- Identify the need for continuous improvements/modifications
- Assess funding adequacy in the PPBE process
- Collect information for use on follow on systems' development and analyses



# Will Cost - Should Cost Management

---

- Goal - drive productivity improvements into programs during contract negotiations and throughout program execution (including sustainment)
- Goal - eliminate cost overruns and deliver programs below budget baselines that are set using independent Will-Cost estimates



# Incentives

---

- Government managers and industry managers
- Seek and eliminate low value added ingredients of program cost and reward appropriately those who deliver this
  - For government managers, additional resources to enhance their programs and professional recognition
  - For industry, sharing in savings realized in the form of increased profit and enhanced corporate recognition for delivering value



# Overview

---

- Product Support Background
  - Assessments of DOD Product Support Actions
  - Product Support Strategy
  - Product Support Business Model
- Current Picture of Product Support Costs
  - Affordability
  - O&S Cost Management
  - Data, VAMOS, Processes/BCA, Reporting SARS/Quad Chart
  - AT&L Will Cost/Should Cost
- Product Support BCA Guidebook
  - Definition
  - Structure
  - Delivery
  - Other considerations



# DoD Product Support and BCA Definition

- What is a BCA?

“A (Product Support) BCA is a structured methodology and document that aids decision making by identifying and comparing alternatives by examining the mission and business impacts (both financial and non-financial), risks, and sensitivities”



# Purpose of a BCA

---

- Support decisions that balance benefits, costs and risks within some form of prioritization
- Provides a fair and objective study to lead to a decision, not justify a decision after the fact
- For product support strategies, assess performance and costs with the goal to:
  - Optimize total system availability
  - Minimize cost
  - Minimize logistics footprint



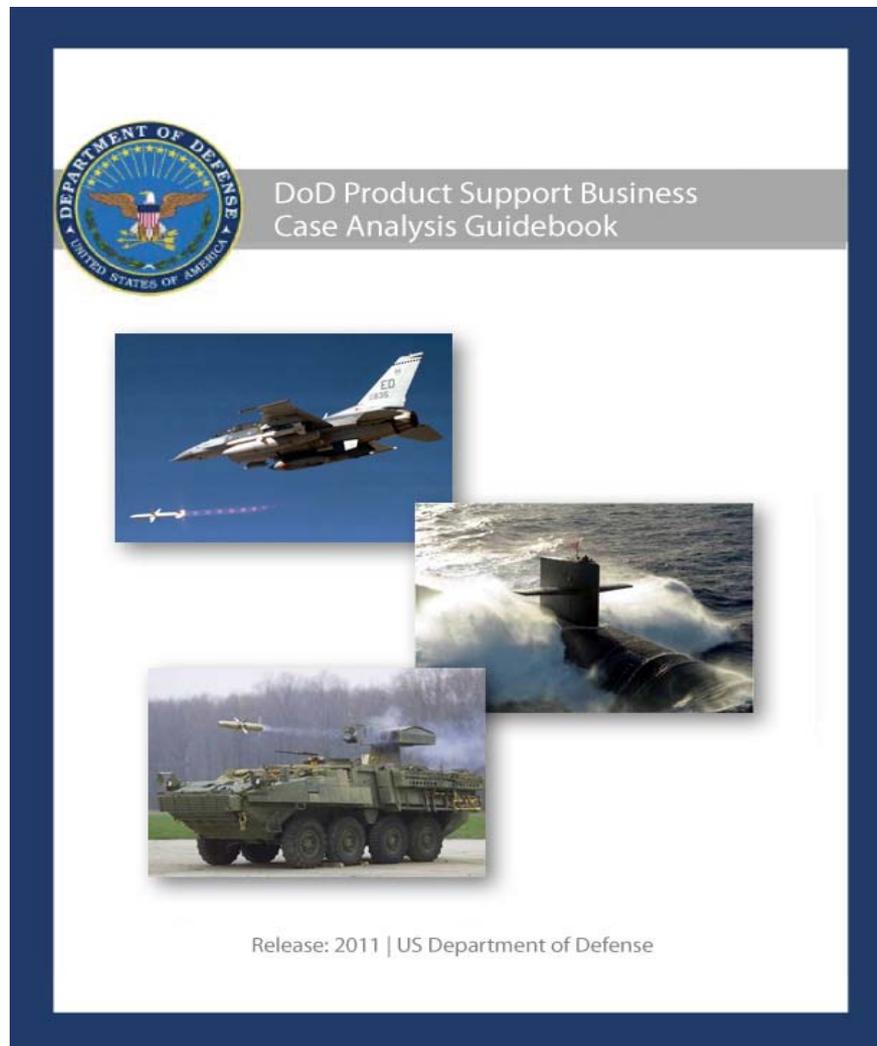
# Business Case Analysis Structure





# Product Support BCA Guidebook Overview

- Purpose
- People
- Data Management
- Process & Content
- Governance
- Documentation
- Checklist
- References





# BCA People

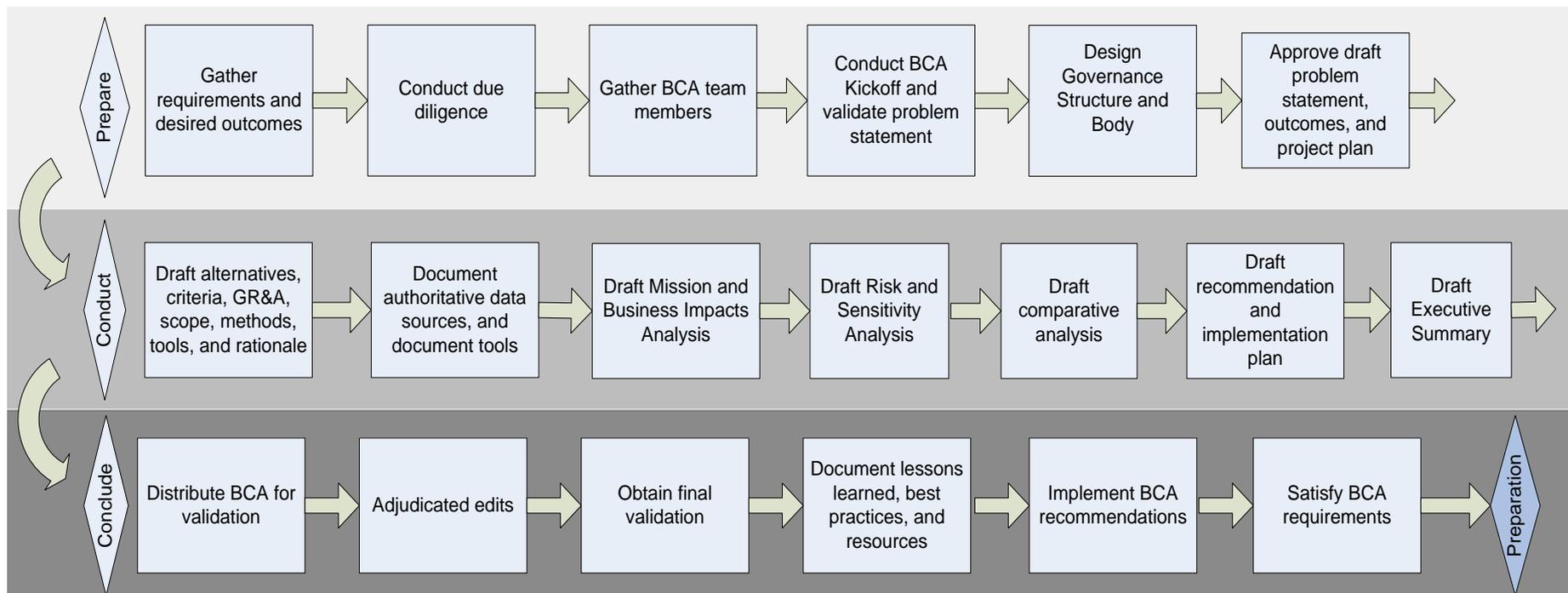
---

- A. Sponsor
- B. Owner
- C. Warfighter
- D. PM/PSM
- E. Governance Body
- F. Business Analyst
- G. Logistician
- H. Systems Engineer
- I. PSI/PSP
- J. Data Manager
- K. Legal & Contracts
- L. Approval Authorities
- M. Subject Matter Experts (SMEs)
- N. Other



# Draft DoD BCA Process

The BCA process flow prepares, performs, and presents a BCA in a structured manner to ensure effective documentation and credible decision support.





# BCA – Content

<b>Executive Summary</b>	
<b>Introduction</b>	<b>Problem Statement</b>
	<b>Background</b>
	<b>Scope</b>
<b>Desired Outcomes and Requirements</b>	<b>Desired Outcomes</b>
	<b>Requirements</b>
<b>Assumptions and Methods</b>	<b>Grounds Rules, Assumptions, and Constraints</b>
	<b>Analysis Methods, Tools, and Rationale</b>
	<b>Evaluation Criteria</b>
<b>Alternatives</b>	<b>Current Baseline/Anticipated Initial Support/Status Quo</b>
	<b>Alternatives</b>
<b>Mission and Business Impacts</b>	<b>Benefits and Nonfinancial Analysis</b>
	<b>Cost and Financial Analysis</b>
<b>Risk Analysis</b>	<b>Risk Analysis and Mitigation Plans</b>
<b>Sensitivity Analysis</b>	<b>Sensitivity Analysis</b>
<b>Conclusion</b>	<b>Comparison of Alternatives</b>
	<b>Summary of Results</b>
<b>Recommendations</b>	<b>Specific Actions Based on Business Objectives</b>
	<b>Implementation Plan</b>



# Comparison of Alternatives

---

- Overall integrated score for each alternative
  - Requires extensive weighting and scoring (scoring criteria essential)
  - Rolls cost, schedule, and performance into a single score
  - Potential to lose important distinctions in the process
  - Good for repeatability and transparency
- Robust discussions of the recommendation present the trade space around the decision



# BCA Delivery

---

- **An undelivered BCA = no BCA**
  - Narrative document, fully addresses the study
  - Comprehensive and organized in a useful manner for decision makers and reviewing officials
  - Fully supported with documentation
    - Anticipated oversight requirements
    - Credibility required to stand up to rigorous auditing
- **The document is iterative by nature**
  - Foundation for follow-on studies within the program
  - Useful in analogy methodology of future programs



# Other BCA Attributes

---

- Standardized BCA process
  - Its principles are similar to those of any scientific or objective based study
  - Emphasis on credibility, transparency and repeatability
- Process is standard yet methods are not prescribed
  - Tailor to the problem statement
  - Availability of required data can drive analysis
  - Required fidelity of the results can drive scope
  - Time and resources available vary by program



# Other BCA Considerations

---

- Workload associated with a BCA can vary from moderate to very large
- You get what you pay for (sometimes)
- Standardized BCA process has many positives
  - Decision support becomes consistent
  - Process clarity provides greater understanding and less ambiguity
  - Structure inherently provides for easier review, updating, and incorporating into follow-on studies



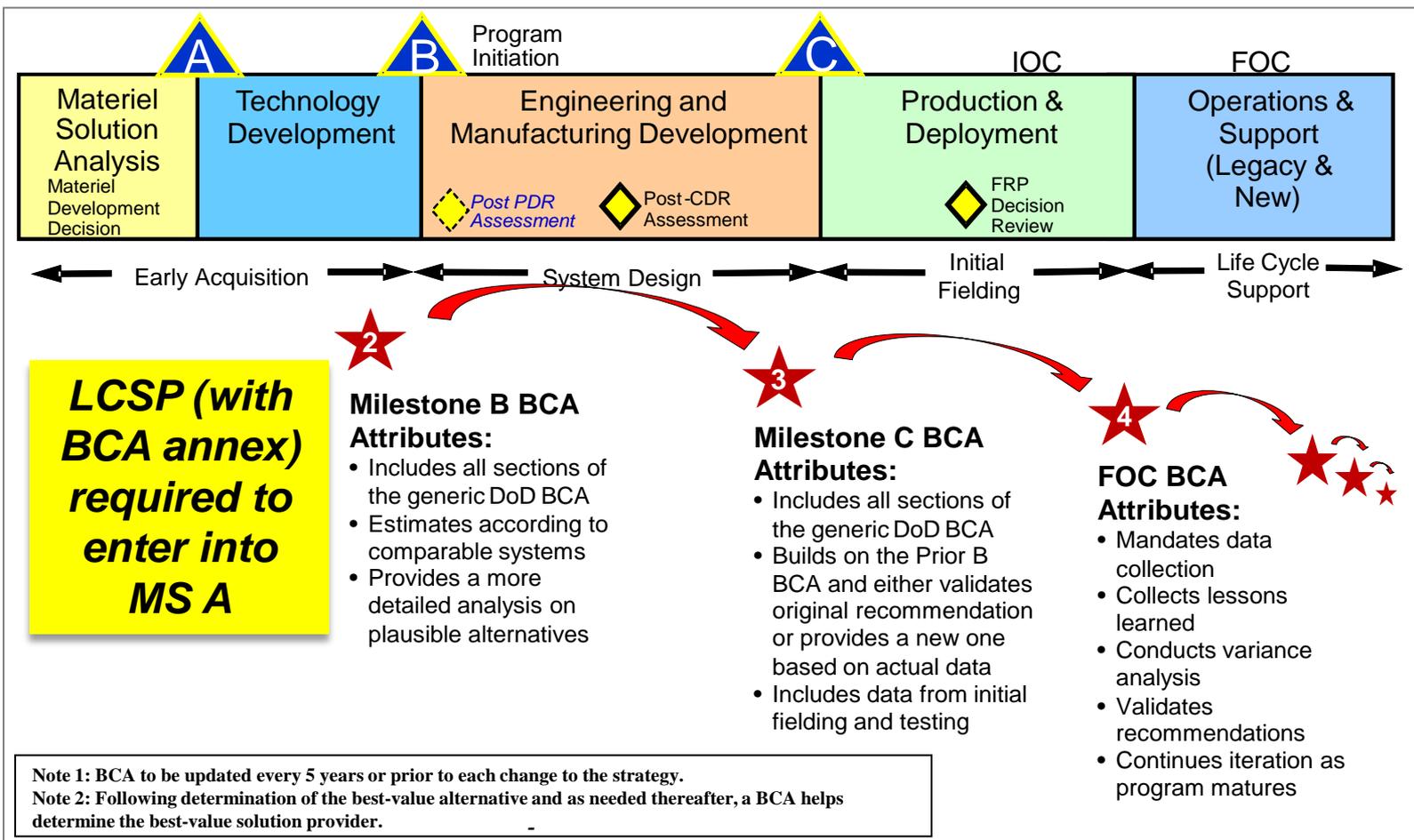
# Product Support Strategy Specifics

---

- For legacy programs, assess changes to existing strategy – develop new program strategy
- For legacy programs, use cost and performance history for baseline – for new programs establish baseline early in the life cycle
- Reflect operational requirements and DoD guidance for contractors on the battlefield
- Address flexibility to support contingencies and surge requirements
- Value and affordability based decision – not the low bidder
  - Decisions informed by a standardized BCA process



# Product Support BCA Requirement





# DoD Product Support BCA Principles

---

- Product Support BCAs should be based on Warfighter requirements
- Be linked to Warfighter outcomes, metrics and contract incentives
- For ACAT 1 programs, develop initial BCA prior to MS B and perform detailed BCA prior to MS C
- Use best value determination
- Update BCA every five years or prior to a change in Product Support Strategy



---

# Discussion



# Will Cost - Should Cost Definitions

---

- Will Cost- cost analysis of a program's costs as conducted and presented by an independent cost analysis team (USD AT&L, 3 Nov 10 Memo, Implementation Directive for Better Buying Power)
- Should Cost (BBP)- 1, a bottoms-up assessment of the program's cost based on reasonable efficiency and productivity enhancements. 2, identify reductions from will cost estimates. 3, utilize competitive contracting and contract negotiations to indentify Should-Cost savings. (USD AT&L, 22 Apr 11 Memo, Implementation of Will-Cost and Should-Cost Management)
- Should Cost (FAR)- A specialized form of cost analysis that does not assume the contractor's historical costs reflect efficient and economical operations. This cost analysis evaluates the economic and efficiency of the contractor's existing workforce, methods, materials, facilities, operating systems, and management (FAR 15.407-4)