

Using Value Engineering (VE)
to Improve the Affordability of Life-Cycle
Sustainment of Department of
Defense (DOD) Systems

Presented to the 15th Annual Systems Engineering Conference
October 22-25, 2012

Dr. Jay Mandelbaum, Institute for Defense Analyses
Mr. James R. Vickers, JR Vickers & Associates
Mr. Anthony Hermes, Institute for Defense Analyses



4850 Mark Center Drive
Alexandria, Virginia 22311

Outline

- **Background**
- **Value Engineering in Sustainment Contracts**
- **Conclusions and Summary**



Why Now?

- Public Law making VE mandatory across the government has been updated (Jan 2011)
- USD(AT&L) issued a VE policy memorandum in Dec 2011—
 - *“... we can achieve an even higher level of performance by emphasizing greater application of both in-house VE and contractor-initiated VE change proposals.”*
 - *“I would like to track your targets on a quarterly basis.”*
- New DoD Instruction (DoDI 4245.14) signed
 - Establishes VE policy
- OMB Circular A-131 in revision



Introduction

- **Two aspects of VE**

- **Value methodology**

- **Proven track record for reducing unnecessary costs, increasing efficiency, enhancing quality, and improving performance**

- **Contractual clauses**

- **Incentivizes government contractors to enhance the government's value proposition by allowing the contractor to receive a share of the cost savings generated from Value Engineering Change Proposals (VECPs)**
 - **The Federal Acquisition Regulation (FAR), parts 48 and 52, mandates the inclusion of a VE clause in many government contracts**



Briefing Purpose

Explore the benefits of using VECPs on service contracts, and in particular, life-cycle sustainment contracts



Why Worry about VE on Service Contracts (1 of 2)

Contract Actions	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total DOD (\$B)	300.4	340.3	397.2	397.2	367.8	373.7
Service only (\$B)	151.8	169.7	193.5	184.4	191.2	189.0
Ratio of services to total (%)	50.5	49.9	48.7	46.4	52.0	50.6

Source: Federal Procurement Data System (FPDS) Extract, January 2012

Why Worry about VE on Service Contracts (2 of 2)

- **VECPs are almost non-existent on service/sustainment contracts**
 - FAR written for hardware
 - Hard to calculate savings with certainty
 - Mechanisms for sharing savings



More than half of DOD contract actions are not being considered for the application of a proven cost reduction approach

Outline

- **Background**
- **Value Engineering in Sustainment Contracts**
- **Conclusions and Summary**



Structure of Sustainment Contracts

- Typically a hybrid of different types of contract line items
 - Cost reimbursable
 - Fixed price
 - Some may be performance-based
- Both award fee and incentive fee possibilities



Potential VECP Changes to Sustainment Contracts

- **Improve repair processes by reducing cost of labor and/or material**
- **Challenge costly requirements on turnaround time while still meeting customer needs**
- **Reduce costs associated with sustaining functions (e.g., safety, configuration management, obsolescence management)**



The Business Case - Contractor's Perspective

- Based on tradeoffs between revenue and profit
 - By definition, a VECP will reduce revenue on a contract, even a fixed price contract
 - Shared savings is a source of profit not otherwise available
 - Excluded from Government imposed profit limitations
 - At issue is the effect on fixed overhead because of reduction to labor and/or material cost



Industry can use VE for changes it wants to make, but can't figure out how to pay for it

Additional Business Case Considerations for Cost Reimbursable Contract Line Items

- **Contractor would rarely make the change without a VECP**
- **Incentive fee with a target cost**
- **Cost-based award fee**
- **Incentive fee for performance**



Additional Business Case Considerations for Fixed Price Contract Line Items

- Incentive fee for performance or negative incentive for missing target
- Amount of non-recurring engineering required
- Improving reliability with PBL thresholds



Other VECP Benefits to Industry

- Capturing follow-on work
- Improving the contractor's reputation
- Obtaining a good recommendation regarding performance and customer satisfaction
- Avoiding risk and potential losses
- Opportunity to incorporate new technology to enhance profit or to increase competitiveness
- Reducing “less desirable, but necessary” work
- Complements internal lean, six sigma efforts



The Business Case - Government Perspective

- **Reduces contract cost while still meeting sustainment needs**
 - Provides opportunities for long term savings
- **May improve reliability, quality, and/or performance**
 - Address part obsolescence
 - Incorporate new technologies
- **Incentivizes contractors to address DOD's cost drivers**
- **Enables essentially free development and implementation cost for changes**



When to Identify Opportunities?

- **Program start-up reviews**
 - Look for disconnects among customer expectations, requirements, and price
 - VECPs can help with alignment
- **Budget reviews**
 - Examine cost drivers
 - VECPs can challenge requirements
- **Risk reviews**
 - Identify risks
 - VECPs can introduce new technologies to reduce risk
- **Technology benchmarking**
 - Benchmark what others are doing
 - VECPs can help pay for NRE costs to bring in new components



How to Identify Opportunities

- **Identify significant cost risk drivers**
 - **Seek opportunities to lower that risk**
- **Challenge requirements**
 - **Example: By using the VE methodology, the contractor has found that not all repairs have the same priority – some go directly to customers, some go to inventory**
 - **Contractor could challenge the requirements and propose that the time period for repairs be a function of the destination of the item**



Outline

- **Background**
- **Value Engineering in Sustainment Contracts**

- **Conclusions and Summary**



Conclusions

- **DOD leadership has given direction to use VE to pursue Better Buying Power initiatives to reduce the cost of the products and services DOD acquires**
- **To comply with this, DOD should take actions to remove VECP barriers**
 - **Increase training and awareness of program offices and contracting organizations**
 - **Modify the FAR to include a clause for service contracts and develop associated guidance**
 - **Add a mandatory VECP clause to sustainment contracts with little incentive for the contractor to improve cost**



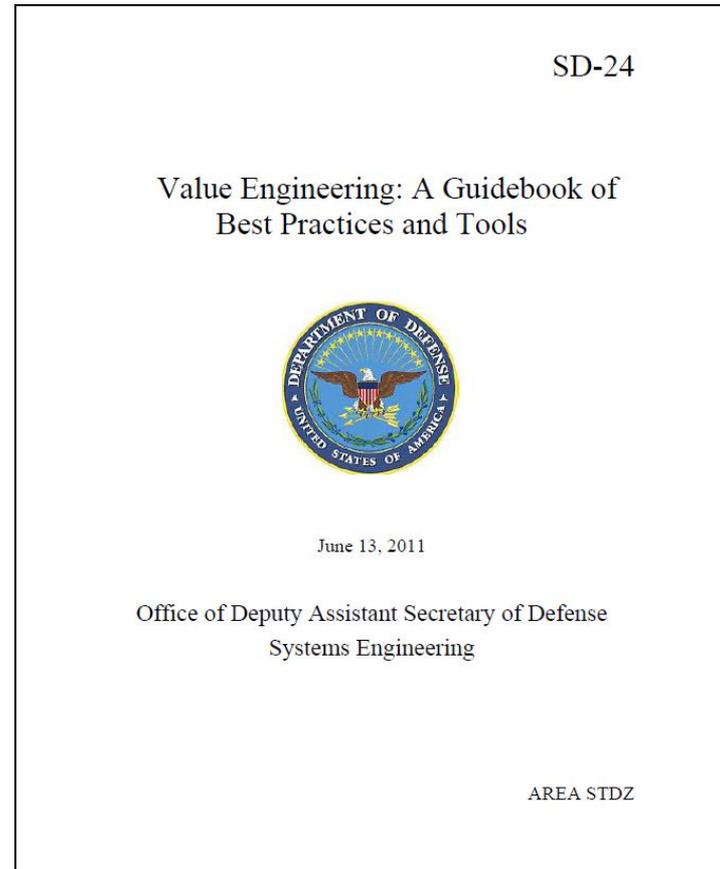
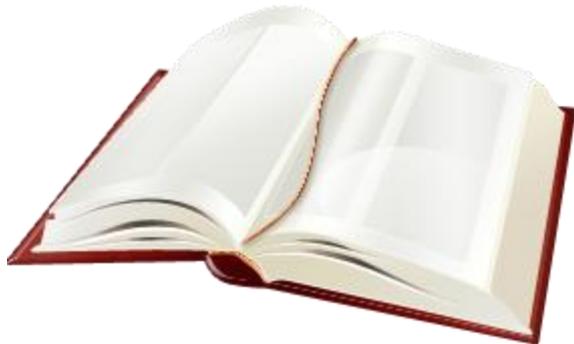
Summary

- **VECPs are not being used on service/sustainment contracts**
- **Plausible quantitative and qualitative business case for industry to use VECPs on these contracts**
- **Natural places in common industry practices where VECPs should be considered**
- **VECPs on sustainment contracts is also in the best interests of the government program and it supports the Better Buying Power initiatives**
- **DOD should take action to remove VECP barriers**



For More Information

- **Institute for Defense Analyses (IDA), Value Engineering and Life-Cycle Sustainment, Document D-4710, pending**



Link to document available at
http://www.acq.osd.mil/se/initiatives/init_ve.html

Questions

