



ACQUISITION,
TECHNOLOGY
AND LOGISTICS

THE UNDER SECRETARY OF DEFENSE

3010 DEFENSE PENTAGON
WASHINGTON, DC 20301-3010

OCT - 5 2009

MEMORANDUM FOR: SEE DISTRIBUTION

SUBJECT: FY 2009 DoD Value Engineering (VE) Performance Metrics and FY 2010
VE Program Plans

For 26 years, the Department's VE program has reduced costs, increased quality and improved mission capabilities across the entire DoD spectrum and has achieved savings of more than \$37 billion. Services and Agencies attain savings by using a simple, flexible and structured set of tools, techniques and procedures that challenge the status quo and promote innovation and creativity. VE also motivates and incentivizes government participants and their industry counterparts to increase their collaboration in achieving best value solutions as part of a successful business relationship. Participants in the VE Program reported approximately \$1.6 billion in savings in FY 2008 (Attachment 1).

DoD Components are required to submit an annual statistical summary of their VE effort. Please prepare and submit the following not later than December 1:

1. A report of your FY 2009 VE Metrics (using the guidance at Attachment 2 and data on Attachments 3 and 4).
2. A report of your VE Plans for FY 2010.

Please send both reports electronically to Mr. Chet Bracuto at Chet.Bracuto@osd.mil and Dr. Danny Reed at DReed@ida.org. Thank you for your support as we work to improve and expand the use of Value Engineering.

A handwritten signature in black ink, appearing to read "Ashton B. Carter".

Ashton B. Carter

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**FY 2008 DoD VE Statistics
Annual Value Engineering Report**

PART I

Agency Official Responsible for VE Program:

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Agency VE Expenditures (\$'s Invested in VE this fiscal year):	\$106M
Number of Value Engineering Change Proposals (VECP) Submitted:	60
Number of VECPs approved:	39
Dollar Share of Savings Provided to Contractors (VECP)	\$13M
Number of VE Studies performed:	1,254
Return on Investment (annual savings divided by expenditures):	14.6:1
Total Annual VE Savings	\$1,570M
VE Savings/TOA (Goal 1.5%)	0.38%

TOTAL AGENCY NET LIFE-CYCLE COST SAVINGS ATTRIBUTABLE TO VE

A. A summary of cost savings and avoidances reported by category (See B. below):

B. Total VE Savings by Category:

Category	Cost Savings (\$M)		Cost Avoidance (\$M)	Total Savings (\$M)
	1 In-House	2 Contractor	In-House	
VEP	627.42		908.91	1,536.33
VECP	21.16	12.56	0.21	33.94
TOTAL	648.58	12.56	909.12	1,570.26

PART II

Department of the Army

List the top five VE projects by name. Describe any quality or other non-quantifiable improvements resulting from VE.

Project Title	VE Expenditures (\$M)		Cost Savings (\$M)		Cost Avoidance (\$M)
	In-House	Contractor	In-House	Contractor	In-House
Corps of Engineers					

Project No. 1	Ft. Belvoir Hospital Ph.1	0.01		34.00
Project No. 2	E. Baton Rouge SSO	0.15		21.00
Project No. 3	Ft. Meade Def. Info Sys. Agy.	0.07		14.00
Project No. 4	Tuttle Creek Dam & Res Seismic Retrofit	0.10		12.00
Project No. 5	Des Moines & Racoon Rivers	0.05		10.00
Army Materiel Command				
Project No. 1	Body Armor		43.88	87.75
Project No. 2	Tank Armor		20.12	69.32
Project No. 3	Info Technology Sys		28.87	58.87
Project No. 4	SEPV2 Tank		21.49	8.68
Project No. 5	Container Handling Unit		11.99	14.19
Corps of Engineers		Quality/Non-quantifiable Improvement		
Project No. 1	MILCON FY 11-13	Count Subcontracts towards Small Business Goals		
Project No. 2	MILCON FY 11-13	Consider LEED self-certification within Army Center of Excellence		
Project No. 3	Markland Miter Gates	Define miter gate fabrication tolerance requirements		
Project No. 4	Cincinnati Waterfront	Complete flood studies prior to construction contract negotiations		
Project No. 5	Warriors in Transition Barracks Complex, Ft. Benning, GA	Site is located on a landfill, so VE consult included a landfill expert as a team member. VE Team conveyed risk to the initial site and project site was changed. Quantity of cost avoidance is unknown.		
Army Materiel Command		Quality/Non-quantifiable Improvement		

Department of the Navy						
List the top five VE projects by name. Describe any quality or other non-quantifiable improvements resulting from VE.						
	Project Title	VE Expenditures (\$M)		Cost Savings (\$M)		Cost Avoidance (\$M)
		In-House		In-House	Contractor	In-House
Project No. 1	ALQ-99 Jammer High Voltage Module	0.93				35.00
Project No. 2	EMDU (NAVSUP)	0.00		33.49		
Project No. 3	Legacy Gyro Replacement	4.06		32.00		

Project No. 4	H53 & P3 Displacement Gyro	0.65	27.00	
Project No. 5	FA-18E/F Radar Altimeter Shock Mount	0.59		25.00
Quality/Non-quantifiable Improvement				
Project No. 1	Avionics Component	Alternative resource option for near-term problem management		
Project No. 2	Light Emitting Diodes (2007)	Improved Human System Interface; Elimination of hot spots; Decrease of mechanical damage to switch/indicators; Reduction in		
Project No. 3	A/N SPY-1 radar alignment	New laser technology method is more accurate than old method; Data is recorded directly to laptop, which eliminates manual data		
Project No. 4	Javelin Launch Tube Enhancement	Reduced a 60% failure rate to USMC launch tubes due to cracking and abrasion damage by 90% by applying a protective urethane coating to the tubes.		
Project No. 5	C4I Design-Budget Modifications to Aircraft Carrier RCOH	Implemented a new design and budget strategy for purchasing and installing command, control, communications, computers and intelligence systems at the latest possible timeframe during Aircraft Carrier Refueling Complet Overhauls in order to acquire the latest technology at the lowest possible cost.		

Defense Logistics Agency						
List the top five VE projects by name. Describe any quality or other non-quantifiable improvements resulting from VE.						
	Project Title	VE Expenditures (\$M)		Cost Savings (\$M)		Cost Avoidance (\$M)
		In-House		In-House	Contractor	In-House
Project No. 1	VHF Antenna			25.80		
Project No. 2	Tire and Wheel Assembly					5.75
Project No. 3	Electronics Cover			3.93		
Project No. 4	Brake Shoe Set			2.67		
Project No. 5	Augmentor Liner			2.57		
Quality/Non-quantifiable Improvement						
Project No. 1	Lean Six Sigma Green Belt Project	Screensavers were developed to promote the VE program; Poster boards were completed to promote the Million Dollar Club and placed throughout the building; and several articles were written for publication, including the Defense Supply Center Columbus federal newspaper - The Voice, and in Maritime's quarterly newsletter.				
Project No. 2	Develop and Implement a New VE Project Database	The new database tracks all VE savings, including Land/Maritime associate's savings for the Million Dollar Club. Other enhancements include developing standard reports for tracking program metrics. The new database provides process improvements and improved efficiencies within the VE organization.				

Project No. 3	Standard Operating Procedure for NSN Research	The process ensures all members execute a systematic approach that will improve productivity, efficiency, and possibly aid in the reduction of potential missed savings opportunities. This SOP will also serve as the reference document to facilitate training of newly assigned members to team.
Project No. 4	VE Project Worksheet Lean Event	The Lean event automated the process of documenting VE Savings on an enhanced VE project worksheet. The documented process and the automated worksheet increase consistency, reduce processing time, variability, and errors in recording VM savings.
Project No. 5	Aviation Forging & Casting Assistance Team	Through collaboration with the American Metalcasting Consortium and the Forging Defense Manufacturing Consortium, AFCAT provided 130 problem resolution services to the Aviation Supply Chain, DLA contractors and Service customers.

Missile Defense Agency

List the top five VE projects by name. Describe any quality or other non-quantifiable improvements resulting from VE.

	Project Title	VE Expenditures (\$M)		Cost Savings (\$M)		Cost Avoidance (\$M)
		In-House		In-House	Contractor	In-House
Project No. 1	Sea-Based X-Band Radar Communications Study			2.28		2.49
Project No. 2	THAAD Launcher E3 BQT			1.02		
Project No. 3	THAAD Missile Assets			17.58		
Project No. 4	THAAD Direct Strike Lightning Test			0.65		
Project No. 5						

Quality/Non-quantifiable Improvement

Project No. 1	Sea-Based X-Band Radar Communications Study	Improved efficiency of BMDS communication systems; mitigation of redundant communication systems
Project No. 2	THAAD Launcher E3 BQT	Streamlined test efforts; quality of launcher maintained

Project No. 3	THAAD Missile Assets	Useful application of residual hardware
Project No. 4	THAAD Direct Strike Lightning	Improved test procedures and test assets
Project No. 5		

Department of Defense Guidance for the Preparation of Value Engineering (VE) Performance Metrics

The DoD Components should compile and submit an annual statistical summary of their value engineering efforts as outlined below. The data should be aggregated and broken out by major commands/centers. Present the Component totals for each statistic as a single row or column. The data should cover the entire fiscal year.

1. In-house implemented VE Proposals (VEPs)
 - a) Number of studies implemented.
 - b) What was the net government saving (\$M)?
 - i) Cost savings.
 - ii) Cost avoidance.
 - c) What was the total government investment (\$M)?

2. Contractor submitted VE Change Proposals (VECPS)
 - a) Average number of days to process and award the proposals.
 - b) Number of proposals awarded.
 - c) Number of proposals received.
 - d) What was the net government saving (\$M)?
 - i) Cost savings.
 - ii) Cost avoidance.
 - e) What was the total government investment (\$M)?
 - f) What was the net contractor saving (\$M)?

3. Data for Top Five Projects (VEPS and VECs)

- Project title
- Expenditures – in-house
- Cost savings – in-house
- Cost Savings – contractor
- Cost Avoidance – in-house
- Statement of quality/non-quantifiable improvement

4. Definitions

Cost savings and cost avoidances (\$M) are nets to the government (i.e., less government investment). It is allowable to report savings up to six years consistent with the FYDP that is current at the time when the value improving/VE project is implemented. All cost savings and cost avoidances are recorded in base year dollars of the report's fiscal year. One hundred percent of the net government savings over the FYDP period may be reported.

Contractor VECs

Received: Number of VECP received during the current fiscal year.

Awarded: Number of VECP contract modifications made during current fiscal year; does not include secondary settlements.

Avg. days to award: Average number of calendar days to process the VECs. The start time shall be when the Program Office/MACOM receives VECP. The completion time is when the Contracting Officer modifies the contract. Non-Government processing time is excluded.

Government Savings (\$M): Sum of VECP cost savings and VECP cost avoidances.

Cost savings are savings resulting from the application of a VECP to contracts awarded by the same contracting office or its successor for essentially the same unit. Cost savings include: 1) instant contract savings, 2) concurrent contract savings, and 3) future contract saving.

Cost avoidances are means those measurable net reductions resulting from a VECP in the Agency's overall projected costs, exclusive of cost savings. Cost

avoidances can be Agency costs of operation, maintenance, logistic support, or Government-furnished property.

Net Contractor Savings: Equals the total contractor's share from the VECP less the contractor's development and implementation costs, which are those costs the contractor incurs on a VECP specifically in developing, testing, preparing, and submitting the VECP, as well as those costs the contractor incurs to make the contractual changes required by government. The savings are recorded in base year dollars of the report's fiscal year.

Future Years Defense Plan (FYDP) period covers prior year, current year, budget year (BY), BY + 1, BY + 2, BY + 3, and BY + 4. Savings can not be claimed twice, therefore, prior year reported savings are not claimed in the current report. When the Service/Agency captures actual savings, the savings may be reported in the year they occur for up to six years

Government Investment (\$M): Development and implementation costs are those Government costs that result directly from developing and implementing each value improving project, such as any net increases in the cost of maturing an initial proposal, testing, operations, maintenance, and logistics support. For this metric, include program operation costs are associated with the VEP program in the VEP investment metric, and include program operation costs are associated with the VECP program in the VECP investment metric. These costs are recorded in base year dollars of the report's fiscal year.

In house VEPs:

Implemented: Number of VEPs implemented/settled/approved during the current fiscal year. These VEPs can not be included in subsequent years.

Government Savings (\$M): Sum of VEP cost savings and VEP cost avoidances.

Cost savings are current year dollar savings and other programmed procurement reductions.

Cost avoidances are savings that can not be allotted to "cost saving."

Program Operation Costs are Government costs incurred within the VE program that can not be directly attributed to specific VEPs or VECPs. These costs may originate from personnel salaries, VE Program Requirement Clause administration, studies, travel, training, and workshops, and other direct and indirect costs associated with only the VE program. Include overhead costs that can be reasonable estimated and justified.

Return on Investment (ROI) equals the total Government savings divided by the total Government investment.

VEP is a document that records the use of Functional Analysis to affect changes that improve the value of required functions and determine the best value for the government.

VECP is formal, documented recommendation by a contractor requiring government approval and requiring a modification to the contract.

DoD IG Issue Resolution Agreement:
Defining Value Engineering (VE) for Reporting Purposes

Background:

The DoD VE Quality Management Board (QMB) was tasked with developing guidance that differentiates the application of VE techniques and the reporting of VE savings from other cost reduction initiatives. Other initiatives include such efforts as the Navy's AEGIS Affordability Management Program, directed feasibility studies, logistics engineering change proposals, suggestions, and VE savings realized by foreign military sales customers. Additional examples of other initiatives include recent acquisition reform programs, as well as efforts from other cost-reduction initiatives such as the DoD Spare Parts Breakout Program and other activities normally expected in the performance of functions such as inventory management and purchasing.

The DoD Inspector General's Office agreed to work with the QMB to develop this guidance in a consensus building format.

Agreement was reached to clarify guidance in the following areas:

- a. VE definition for accounting purposes
- b. Savings & cost scope & calculation
- c. Savings & cost documentation
- d. VE Integration with or differentiation from other programs

The QMB DoD IG Issue Resolution Working Group reached consensus as follows in the above four areas:

A. VE Definition (Criteria) for Accounting (Reporting) Purposes

The results of value improving activities may be included in annual VE reporting if one of the following two criteria applies:

1. Results from an approved VE Change Proposal (VECP)

-or-

2. Results from a change that improves value of required function (where value is a function of performance and cost) using function analysis to determine best value (an example worksheet showing the minimum elements of function analysis is included below).

B. Savings & Cost Scope & Calculation

Savings

All cost savings and cost avoidances that are included will be net savings to the government. It is allowable to report savings up to six years consistent with budget projections in the Future Years Defense Program (FYDP) that is current at the time the value improving project is implemented. Savings may be reported in the years they occur during the FYDP period or as an estimate projected against the FYDP budget profile.

VECPs. For acquisition savings, report the government's share during the VECP sharing period; thereafter until the end of the FYDP period, 100% of the net savings may be reported. For collateral savings (life cycle savings other than acquisition), government share of average annual collateral savings for the FYDP period may be reported.

VEPs (value improving projects other than VECPs). For acquisition savings, 100 percent of the net savings for the FYDP period may be reported. For collateral savings (life cycle savings other than acquisition), 100 percent of average annual collateral savings for the FYDP period may be reported.

Cost

On a project by project basis, development & implementation costs are those costs above normal government administrative costs that result directly from developing and implementing each individual value-improving project, such as any net increases in the cost of testing, operations, maintenance, and logistics support. The term does not include the normal administrative costs of processing the value improving project or the costs of running the VE office. The annual report will sum project by project costs and add the annual cost of running the VE office (work force and other required resources) for a total VE program cost.

Return on Investment (ROI)

ROI equals total net VE savings to the government divided by total VE program costs (savings and cost as defined above).

C. Savings & Cost Documentation

To be included in the performance metrics data, each value improving project must be documented and include the following minimum essential documentation elements:

1. Unique project number or identifier
2. Identification of development & implementation costs to the government above normal administrative costs consistent with the Federal Acquisition Regulation. Government costs are those agency costs that result directly from developing and implementing the value-improving project, such as any net increases in the cost of testing, operations, maintenance, and logistics support. The term does not include the normal administrative costs of processing the value-improving project.
3. Description of gross and net savings to the government: acquisition and/or collateral (life cycle cost other than acquisition)
4. Description of technical changes
5. Validation of savings (either through actual documented savings or documented estimate of future savings and/or cost avoidances using established financial analysis procedures - approval and date)
6. Approval of technical change and date
7. Identification of who did the study or analysis or submitted idea
8. Program approval and date
9. Identification of items to which VE proposal applies
10. Date project initiated or proposal submitted for approval
11. Cost and savings figures for each of the years identified

12. Date of construction/etc. - include customized instructions on completing form (applies to construction projects only)

13. Indication of the above VE criteria met (if not VECP, must document minimum elements of function analysis)

D. VE Integration With or Differentiation From Other Programs

DoD Components are encouraged to integrate VE with other similar programs. To be reported, projects must meet the minimum criteria and documentation requirements listed above. Savings reported through multiple channels are allowed.

Function Analysis/Best Value Alternative Worksheet (Examples)

(For reporting purposes, the minimum elements necessary to constitute function analysis required for other than VECs are: project identification; function definition; alternative(s) identification; and alternative selection.)

Project Identifier:

- Example 1. Finnigen Pin Sparing.
- Example 2. Mark I Mod O Disposable Coffee Receptacle.
- Example 3. Flag/Senior Management Liquid Containment Vessel.

Function Definition (Use Verb-Noun Descriptor):

- Example 1. Obtain Finnigen Pins.
- Example 2. Hold Coffee.
- Example 3. Impress Associates.

Function Performance Alternatives:

- Example 1.
 - a. Purchase from OEM.
 - b. Find alternate source.
 - c. Reverse Engineer for Competition.
- Example 2.
 - a. Paper cups.
 - b. Styrofoam cups.
- Example 3.
 - a. Gold Leaf embossed ceramic.
 - b. Cut Waterford crystal.

Selected Alternative:

- Example 1. Use alternate source. (other suppliers; lower cost)
- Example 2. Paper Cups. (Biodegradable, no disposal cost)
- Example 3. Gold Leaf Embossed. (Stars don't show well on Crystal)

FY08 DoD VE Statistics

	Army	Navy	Air Force	MDA	DLA	DFAS	DoD Total
VE Performance against 1.5% Goal							
Total TOA (\$M)	0	0	0	0	0	0	0
VE \$ /Total TOA \$ (%)	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
In-House (VEP)							
# Implemented	0	0	0	0	0	0	0
Net Govt. Savings (\$M)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cost Savings (\$M)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cost Avoidance (\$M)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Govt. Investment (\$M)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Contractor (VECP)							
Avg. Days to Award	0	0	0	0	0	0	#DIV/0!
# Awarded	0	0	0	0	0	0	0
# Received	0	0	0	0	0	0	0
Net Govt. Savings (\$M)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cost Savings (\$M)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cost Avoidance (\$M)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Govt. Investment (\$M)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Net Contractor Savings	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total							
Net Govt. Savings (\$M)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Govn't Invest't (\$M)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ROI (xx:1)(savings/invest)	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

Total Obligation Authority (TOA)
 Return on Investment (ROI) (Net Government saving over Government investment)
 Value Engineering Change Proposal (VECP)
 Value Engineering Proposal (VEP)

Attachment 3

VE -Top Five Projects

List the top five VE projects by name.

Describe any quality or other non-quantifiable improvements resulting from VE.

	Project Title	VE Expenditures (\$M)		Cost Savings (\$M)		Cost Avoidance (\$M)
		In-House		In-House	Contractor	In-House
Project No. 1						
Project No. 2						
Project No. 3						
Project No. 4						
Project No. 5						
		Quality/Non-quantifiable Improvement				
Project No. 1						
Project No. 2						
Project No. 3						
Project No. 4						
Project No. 5						