



INSTITUTE FOR DEFENSE ANALYSES

**Value Engineering Change Proposals  
in Supplies or Services Contracts**

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Danny L. Reed, Project Leader

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## **PREFACE**

The Institute for Defense Analyses (IDA) prepared this document for the Office of the Director, Defense Systems, under a task titled “Total Ownership Cost Reduction.” This document partially fulfills the task objective of supporting initiatives related to Reduction of Total Ownership Cost and Value Engineering by providing guidance, templates, and examples of how Value Engineering Change Proposals are being processed in today’s acquisition environment.

Emile Ettedgui and Stanley A. Horowitz of IDA were the technical reviewers for this paper.



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## **A. INTRODUCTION**

### **1. Purpose**

This document provides examples of how Value Engineering Change Proposals (VECPs)<sup>1</sup> are being processed in today's complex acquisition environment, along with other information about VECPs intended to be useful to contractors and Government officials.<sup>2</sup> This independent work by the Institute for Defense Analyses (IDA) is designed for Department of Defense (DoD) Component contracting and acquisition management personnel and DoD contractors to show actual examples of how VECPs are currently being used to produce savings for both the Government and contractors. The widespread dissemination and use of the knowledge contained in this document will advance the following strategic goals promulgated in the Defense Department's Value Engineering (VE) strategic plan:<sup>3</sup>

- Improve the value to the Government of defense systems,
- Align industry and Government incentives in defense systems, and
- Increase VE expertise.

Recent changes in procurement philosophy may affect VE. The past 5 years have seen a curtailment in the number of new acquisition systems and heightened importance for sustainment for older, existing systems. Contractor Logistics Support is being used more often to maintain current fielded systems. New techniques are being sought to improve existing systems, to extend service life, and to reduce operating and support cost. This enhanced interest in sustainment of existing systems offers an increased opportunity for the use of VECPs. The material in this document should be considered a guide (not policy) to encourage contractors to submit VECPs where appropriate and

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<sup>1</sup> According to Federal Acquisition Regulation 52.248-1 (b), a VECP is a proposal that (1) requires a change to this, the instant contract, to implement; and (2) results in reducing the overall projected cost to the agency without impairing essential functions or characteristics, provided that it does not involve a change in deliverable end item quantities only, in research and development (R&D) end items or R&D test quantities that is due solely to results of previous testing under this contract, or to the contract type only.

<sup>2</sup> The course Contractual Aspects of Value Engineering (taught by the Defense Acquisition University as CON 236, as well as by a private contractor) provides a foundation for preparing and evaluating VECPs.

<sup>3</sup> "A Strategic Plan for Value Engineering in DoD," Office of the Under Secretary of Defense (Acquisition, Technology and Logistics), December 2003.

assist Government contracting officers in processing VECPs quickly, thereby maximizing benefits for both Government and industry.<sup>4</sup>

## 2. Background

Value Engineering is an important and flexible tool in the Defense Department's effort to reduce cost, while retaining *required* performance capability. The VE methodology saves money, increases quality, and improves mission capabilities across the spectrum of DoD systems, processes, and organizations. It employs a simple, tailorable, and structured set of tools, techniques, and procedures that challenge the status quo by promoting innovation and creativity. As used in DoD contracting, VE fundamentally looks at any contractually specified item, function, process, or deliverable and devises a way to do it better and cheaper.

Using contractor-submitted VECPs provides incentive to both the Government and its industry partners to achieve real-time best value solutions as part of a successful business relationship. From a Government perspective, benefits include:

- Providing incentive to industry to use its high-level engineering expertise to reduce cost and improve capability on DoD systems immediately; and
- Building a more effective business relationship with industry.

From a contractor perspective, benefits include:

- Increasing financial performance by sharing in the cost savings that accrue from implementation (VECPs provide a source of profit excluded from the profit limitations on contracts);
- Creating business opportunities for modernization or technology insertion;
- Enhancing competitiveness by improving the item in production or other related items and establishing a reputation as a cost-conscious supplier;
- Improving communication with the customer;

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<sup>4</sup> The topic of ensuring that the Government benefits from a VECP is not discussed in this guide. The "Contractor's Guide to Value Engineering (Version 2.1)," Office of the Under Secretary of Defense for Acquisition, Technology and Logistics, May 2006, provides information and suggestions that can facilitate the successful development, preparation, submission, and implementation of VECPs. It describes how the effectiveness of a contractor's VECP is dependent upon the quality of the VECP proposal; knowledge, understanding, and attention applied to proposal preparation and submission; and up front coordination with the Government approving authority.

- Promoting retention and growth of technical expertise by providing engineers with opportunities to work on more challenging problems; and
- Developing technology that can be used on other contracts.

The Defense Department therefore encourages using VECPs on contracts in accordance with the Federal Acquisition Regulation (FAR). FAR Part 48 governs VE within the Federal Government. According to FAR 48.201(a), unless exempted by an agency head, a VE incentive clause must be included in *all* contracts exceeding \$100,000 except those for research and development (other than full-scale development), engineering services for non-profit organizations, personal services, commercial items, or a limited specific product development. Furthermore, the use of the VE incentive clause is encouraged for use in smaller dollar-value contracts where there is a reasonable chance for acquisition savings. For supplies or services contracts, FAR 52.248-1 is the incentive clause that provides the basis for contractors to submit VECPs.<sup>5</sup> Although this clause and its alternates have typically been used in relatively clear-cut situations, an untapped potential exists for flexibility and tailoring to accommodate the needs of the business partners.

The flexibility of VECPs is enormous. For example, consider the situation where a major missile program extends its scheduled procurements due to program funding cuts resulting in annual purchases of half of what was expected. Radomes are a high-cost item with large lot charges under this particular missile program acquisition. If they were to be purchased on the revised procurement schedule, the unit price would increase by 50 percent due to production slow down. Because radomes do not change, the Government wants to make a quantity buy to reduce the overall cost of the program. However, the Government does not have the resources to pay for the quantity buy in the current fiscal year.

The contractor has the latitude to use its own funds to make the quantity radome buy without using the VECP clause. However, the acquisition of the radomes would be at great risk to the contractor with little or no likelihood for return on investment, since, based on FAR pricing principles, the contractor would be required to sell them back to the Government at the price paid. Meanwhile, the contractor would have incurred inventory holding costs and lost opportunity costs. Under FAR Part 48, the better solution would be to use a VECP on the current performance-based contract that would

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<sup>5</sup> Other VE clauses apply to architect-engineer and construction contracts.

enable the contractor to make the quantity buy and sell future radome lots back to the Government at the lower bulk-buy price, thus leading to huge potential savings. In this particular case, using a VECP led to a total savings of \$1,153,500 shared equally between the contractor and the Government.

A mistaken belief is that a VECP requires a change in a specification. It does not; it requires only a change in the contract. The change could be a contract modification for a business arrangement authorizing the VECP and agreeing on sharing future savings without any technical change to the configuration baseline. That was the case in the radome example where the contract contained the former military standard on configuration management. As such, it required the VECP to be submitted on DD Form 1692, "Engineering Change Proposal." On Block 30 of the form, Configuration Items Affected, it listed, "None." On Block 31, Effects on Performance Allocations and Interfaces in System Specification, it listed, "This change will have no effect on the end item's system performance. This Value Engineering Proposal simply allows us to take advantage of the substantial cost savings obtained by the multi-year contract that Company Z has negotiated."

Unfortunately, in today's contracting environment, a number of factors impede taking advantage of this potential. Extenuating circumstances often add complexity to VECP processing. While these circumstances can be accommodated by the current FAR clause, the contracting process is not well understood by all acquisition process participants. An additional complicating factor is the relatively small number of VECPs being submitted as compared to past years.<sup>6</sup> Also, work on a VECP is usually initiated before the VECP is formally accepted by the Government. Until a VECP is approved by the Government, the contractor is at risk for costs incurred. All of these factors create a perception with contractors that the acceptance process is too complicated and the risks are too high.<sup>7</sup> Consequently, many contractors are discouraged from submitting VECPs. Likewise, many program managers and contracting officers within the Government do not understand the VECP contractual process, and lacking this insight, do not fully utilize the program.

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<sup>6</sup> Only 79 VECPs were submitted in FY 2005.

<sup>7</sup> A contractor can significantly reduce the cost risk by working with the Government to develop the VECP.

While there are often multiple contract modifications made on the instant contract before a single VECP is accepted, the process is relatively straightforward.<sup>8</sup> The first modification may be an approval to begin work. The second may be the settlement of all instant, concurrent, and possibly future savings shares (often called the definitization modification).<sup>9</sup> The third modification may be the record ECP that changes the configuration. In addition, as new contracts are awarded, there may be further modifications to provide the contractor with its share of future savings.

In the past, average VECP processing time was extremely lengthy. This situation was not in the best interest of either the Government or the contractor. Lengthy processing time leads to fewer improved units for the Government and smaller savings to be shared between the Government and the contractor. In recognition of this, the Defense Department's VE strategic plan established the following stretch objective: 90 percent of VECPs received should be fully processed (either approved and awarded or rejected) within 180 days by FY 2006.

Communications about benefits and risks with the procurement contracting officer and the buying activity, facilitated by the Defense Contract Management Agency, will help to determine viability and the likelihood of final acceptance. In addition, the undefinitized contract action (UCA) is also an important tool for achieving this objective.<sup>10</sup> It has proven to be one of the best ways to expedite the process, reduce the risk, and enable all parties to maximize savings. Defense Federal Acquisition Regulation Supplement (DFARS) 217.7401(a)(2) excludes VECPs from the restriction on the use of UCAs. Appendix A of this guide reproduces a DoD policy memorandum on the subject of "Value Engineering Change Proposals—Action to Facilitate Implementation," confirming that there are no regulatory obstacles to using UCAs to implement VECPs.

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<sup>8</sup> The instant contract is the contract under which the VECP is accepted by the Government.

<sup>9</sup> Concurrent contract savings are net reductions in the prices of other contracts that are definitized and ongoing at the time the VECP is accepted.

<sup>10</sup> A UCA is a new procurement action entered into by the Government for which contractual terms, specifications, or price are not agreed upon before performance is begun (letter contract or change order). Letter contracts and change orders await negotiations to definitize prices. Equivalently, an unpriced change order (UCO) may be used. A UCO is a change issued within the general scope of, and under the terms of, the contract, for which contractual terms, specifications, or price are not fully agreed upon before performance is begun.

This guide provides examples of how UCAs<sup>11</sup> and other techniques have been used when implementing the following:<sup>12</sup>

- Non-complex VECPs where rapid action is needed;
- Long-term, complex VECPs where the Government funds all nonrecurring expenses (NRE) up front;<sup>13</sup>
- Long-term, complex VECPs where the Government funds some NRE up front;
- Long-term, complex VECPs where the Government funds no NRE;
- VECPs using learning curves and inflation indexes;
- VECPs on performance-based contracts;
- VECPs on incentive contracts; and
- VECPs on development contracts.

Sections B through I of this guide are organized around these topics, respectively. In the conclusion (Section J), we suggest a knowledge management community of practice as a forum for contracting officers, VE practitioners, program offices, and industry share and build on the material in this guide.

This guide should be viewed as a work in progress. DoD offices are empowered to write new best practices on the material contained herein as new ways are developed for implementing the flexible charter provided by the Value Engineering Change Proposal process articulated in FAR Part 48. As these future best practices are fleshed out and applied, submit them as candidates for publication in updates to this guide.

## **B. NON-COMPLEX VECPS WHERE RAPID ACTION IS NEEDED**

This is a situation where the NRE are small, success can be demonstrated quickly, and breakeven occurs relatively early. Even in this simple case, multiple contract modifications are needed to maximize the benefits for both the Government and the contractor. A UCA with appropriate caveats allows the contractor to initiate VECP

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<sup>11</sup> The language in the UCA figures contained in this report is not mandatory. It is an example of language that has been used successfully in the past and may be tailored if necessary.

<sup>12</sup> Most of the examples provided in this guide are based on production situations. By applying new designs, materials, and processes, VE has also been used to extend item life, reduce repair costs, and reduce packaging costs. The contracting considerations are similar.

<sup>13</sup> NRE, as used in this guide, refers to the contractor's development and implementation (D&I) costs (including testing) according to FAR 52.248-1(b). Often, the terms "D&I costs" or "contractor's allowable development and implementation (CADIC) costs" are used.

activity immediately and contractually establishes a Not-to-Exceed (NTE) cost to develop and implement the change. The modification that settles the VECP occurs later—after the contractor has submitted full pricing data.

## **1. Best Practice**

The use of a UCA with appropriate caveats can generate savings for the Government and contractor in situations where quick action must be taken (e.g., all of the savings will occur on the current contract) to modify an item and reduce its cost. The UCA provides the contractor with some assurance the Government will buy the revised item, assuming all caveats and concerns are resolved; it contractually implements the VECP. The contractor may then make informed business decisions about committing resources and taking any other actions necessary to deliver the modified items as soon as possible. Under the best of circumstances, no deliveries of the unmodified item will be made. Without such an indication of interest from the Government, the contractor is much less likely to take any action until final VECP approval. The result of the delay is that most (or, in the worst case, all) of the items will be delivered in the original, more expensive way. The following example illustrates these points.

## **2. Example A**

The Government has awarded a 1-year contract to purchase ground vehicles. The contractor identifies an opportunity to replace a military standard fixed-hand controller (similar to a joy stick) used in the ground vehicle with a derivative of a commercial unit, not built to military standards. On its own initiative, the contractor works with the commercial source to produce a modified unit and tests<sup>14</sup> the unit against the requirements for the military standard version. Based on the test results, the contractor has confidence that the commercial derivative will meet all of the technical requirements at a lower cost. The military standard controller would cost \$7,600, while the commercial derivative is only \$2,100. Since each finished ground vehicle system requires three controllers, the net savings would be \$16,500 per system.

If the contractor's strategy were to prepare and submit a formal VECP and wait for approval before producing modified units, there could be a delay of several months. It

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<sup>14</sup> Best practice would be for the contractor to facilitate VECP acceptance by involving the Government in the testing process to the maximum extent possible.

would take about 90 days to prepare the formal VECP since there would be a requirement for supplier quotes and internal audits as part of the detailed cost proposal. Government processing time would easily take 90 days to evaluate and approve the formal VECP—longer if Government audits were required. Because of lead times for the military standard unit, the contractor cannot afford to wait 6 months on a 1-year contract.

Therefore, the contractor should submit a VECP that includes an NTE cost to develop and implement the change as well as all of the FAR-required elements of a VECP, except detailed pricing. The draft cost estimate would be based on assumptions enumerated in the proposal. The proposal should also include the new design, corresponding test results, and dates for developing a full proposal and committing to negotiations. Within approximately 45 days, the Government could authorize work to begin without the detailed pricing data by issuing a UCA.<sup>15</sup> Detailed pricing is needed for definitization and settlement, which, for this example with minimal NRE, typically would occur about 6 months later. Figure 1 is an example of the UCA. Appendix B contains a different illustrative example that contains excerpts from an actual definitization modification.

### **3. Advantages**

Advantages to the Government of the best practice in this example are:

- Greater savings;
- Minimized NRE liability though a contract modification with an NTE cost to develop and implement the change;
- Earlier implementation of the improved system; and
- Original delivery schedule maintained.

Advantages to the contractor are:

- Greater share of savings to increase profit; and
- Reduced risk of early implementation.

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<sup>15</sup> In the transmittal letter, the contractor should indicate the need for expeditious processing and willingness to accept a UCA.

The purpose of this modification to Contract XYZ is to approve the incorporation of Value Engineering Change Proposal (VECP) X, Rev. 1, dated DD/MM/YYYY, identified as the fixed-hand controller redesign, into the Ground Vehicle System Configuration Baseline on a Not-to-Exceed (NTE) basis. Accordingly, Contract XYZ is modified as follows:

1. The parties agree that this Supplemental Agreement establishes (1) an NTE amount of \$X for the total nonrecurring implementation cost of the fixed-hand controller redesign in accordance with the Contractor’s proposal dated DD/MM/YYYY and (2) an estimated amount of \$X for total Government costs based on the assumptions in the attachment. *This paragraph protects the Government by limiting the expenditures that it is obligated to pay to the contractor and identifying the assumptions used to estimate other Government costs. It is important for the Government to review the assumptions carefully because situations have occurred where higher-than-anticipated Government testing cost rendered the VECP economically unacceptable, in which case the Government should not accept it. This paragraph also protects the contractor by limiting the scope of the work to that defined in the proposal.*
2. The parties further agree that pending definitization, a Not-Less-Than (minimum) per-unit cost savings for incorporation of this fixed-hand controller into future Ground Vehicle System contracts is established as provided in the attachment. *This paragraph assures savings by establishing a minimum per-unit savings. The attachment (which is the referenced proposal) sets conditions for how savings are calculated (e.g. function of quantity and dates). The minimum savings are defined by the contractor in the proposal; a conservative approach, with risk mitigation, should be taken. Agreeing to these conditions is time-consuming; consequently this paragraph may not be needed if there is high confidence that savings will exceed the nonrecurring investment.*
3. The delivery schedule shall be modified to incorporate the VECP as shown in the attachment –or– the delivery schedule will not change. *Use whatever language is appropriate about the delivery schedule.*
4. Limitations of Liability: The approval of the aforementioned VECP is contingent on said VECP performing as prescribed in “Statement of Work” in the VECP proposal and all qualification testing. Should the subject VECP fail to pass said test to the satisfaction of the Government, the Contractor shall be liable to deliver the fixed-hand controller configuration originally contracted for, provided the contractor is allowed a reasonable time to correct any difficulties discussed in qualifications testing and fails to do so. *This paragraph protects the Government interests in case something goes wrong. If the new configuration ultimately fails, there will probably be a need for a schedule adjustment for the contractor to deliver the baseline configuration.*
5. Definitization Schedule: The parties agree they plan to definitize this effort as follows: (a) submit final definitized cost proposal not later than DD/MM/YYYY; (b) complete negotiations of cost proposal no later than DD/MM/YYYY; and (c) sign definitized modification by DD/MM/YYYY. *This paragraph is required for a UCA.*
6. This modification shall not result in any change to the contract price or funding. *This paragraph is included in the UCA when the Government is not increasing the value of the contract. In this example, the contractor will be reimbursed for any NRE from the savings.*

Note: Highlighted text explains the purpose of each paragraph and is not intended to be included in the UCA.

**Figure 1. Example A: UCA for Implementing Non-Complex VECPS**

### **C. LONG-TERM, COMPLEX VECPS WHERE THE GOVERNMENT FUNDS ALL NRE UP FRONT**

This situation adds complexity to Example A. In addition to multiple contract modifications, breakeven occurs in a future contract and nonrecurring engineering (including testing) takes several years, but the Government is able and agrees to fund all NRE for the VECP in the current contract.<sup>16</sup>

Examples B, C, and D are all based on the same basic scenario where the contractor has an existing contract with 5 additional option years (or 6 separate contracts) to

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<sup>16</sup> VECPS provide incentive to contractors to propose creative ideas to the Government. By funding all up-front VECP expenses, the Government is in effect paying for the idea by granting the contractor a share of future savings.

purchase 400 Missile Y Systems per year at \$1.2 million (M) each. The unit price for an item in the missile, the infrared (IR) seeker, is \$70 thousand (K). Table 1 summarizes these contracts.

**Table 1. Example Baseline Conditions for Missile Procurement**

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Item Quantity	400	400	400	400	400	400
Unit Price	\$70K	\$70K	\$70K	\$70K	\$70K	\$70K
Total Item Cost	\$28M	\$28M	\$28M	\$28M	\$28M	\$28M
Government Obligation	\$480M	\$480M	\$480M	\$480M	\$480M	\$480M

For simplicity, the following assumptions were made:

- *All option years will be exercised.* In reality, the exercise of each succeeding option is predicated upon continued full funding, which introduces a significant element of risk in a decision to accept any VECP extending over several years.
- *Unit price is held at a constant \$70K.* In reality, if quantity produced remains constant from one lot to the next, cost generally will decline due to “learning.”
- *Unit cost reduction is held at a constant \$35K.* In reality, the initial unit cost reduction differs from the final unit cost reduction because of learning.<sup>17</sup>

In Year 1 of the contract, the contractor develops an idea to modify the IR seeker in a way that decreases the unit price to \$35K. In addition, the change would replace obsolete technology that in a few years would be difficult and expensive to produce with modern components. Both the Government and contractor want this change. NRE to implement the idea are \$18M. Government qualifying tests will cost another \$2M and will be incurred during Year 3.<sup>18</sup>

None of the three examples include details about the negotiation of the share ratio. There is a great deal of flexibility in establishing how the savings are shared between the Government and the contractor. The percentage that either party receives may vary between 25 and 75 percent. In general, the contractor’s share should be larger if its risks are high or it makes a large investment. The sharing period may also vary as a function of the amount of time it will take for the contractor to receive a reasonable return on

<sup>17</sup> The application of learning curves and inflation is discussed in Section F.

<sup>18</sup> While the \$2M is technically part of the NRE, the Government performs the qualifying tests. The contractor would not be asked to fund these tests. The Government must be reimbursed for this investment before any savings are shared with the contractor.

investment. When there is a long-standing VE relationship, there are examples of an agreement to always share 50/50 for 3 years to avoid negotiating the issue. Inclusion of the sharing ratio in the UCA is optional because it is included in the VECP.

## **1. Best Practice**

A UCA, with appropriate caveats, should be used to get mutually beneficial work started quickly. If the Government is able to fund the NRE, and both parties are interested, the Government should use the funding as leverage to maximize its share of the savings and expedite the process. The following example illustrates these points.

## **2. Example B**

As was the case for Example A, the contractor should submit a VECP that includes an NTE cost to develop and implement the change along with preliminary VE savings estimates.<sup>19</sup> However, in addition to asking the Government to accept the VECP, the proposal is also contingent upon approval of the Government funding the NRE effort.<sup>20</sup> The UCA that the Government issues to do this is simpler than Example A, as shown in Figure 2. The Example A paragraphs on limitations of liability, per-unit savings, and the delivery schedule are not needed. Since the Government is paying for the entire effort, the UCA approval can occur quickly.

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<sup>19</sup> In some situations where the Government pays the entire NRE, the VECP may be processed as a mandatory VECP, provided that FAR 52.248-1 is changed by either Alternate I or II. A mandatory VECP may limit the negotiated contractor share of the savings. Since, in this example, the idea was generated by the contractor, a mandatory VECP is not appropriate.

<sup>20</sup> Since the Government is agreeing to accept the VECP, the proposal should define the acceptance criteria for the new configuration.

The purpose of this modification to Contract XYZ is to approve the incorporation of Value Engineering Change Proposal (VECP) X, Rev. 1, dated DD/MM/YYYY, identified as the IR Seeker Redesign, into the Missile Y System Configuration Baseline on a Not-to-Exceed (NTE) basis. Accordingly, Contract XYZ is modified as follows:

1. The parties agree that this Supplemental Agreement establishes (1) an NTE amount of \$18M for the total nonrecurring implementation cost of the IR seeker redesign in accordance with the contractor’s proposal dated DD/MM/YYYY and (2) an estimated amount of \$2M for Government testing and other costs based on the assumptions in the attachment. *This paragraph protects the Government by limiting the expenditures that it is obligated to pay. It is important for the Government to review the assumptions carefully because situations have occurred where higher-than-anticipated Government testing cost rendered the VECP economically unacceptable, in which case the Government should not accept it. This paragraph also protects the contractor by limiting the scope of the work to that defined in the proposal.*
2. CLIN 000XXX is established for this effort. *Adding a funded effort to a contract requires a Contract Line Item Number (CLIN). The CLIN will have to have acceptance criteria (not addressed in the example), which at this point probably not yet be determined because it will be addressed in the formal cost proposal for this effort.*
3. Definitization Schedule: The parties agree they plan to definitize this effort as follows: (a) submit final definitized nonrecurring implementation cost proposal with a detailed statement of work not later than DD/MM/YYYY; (b) complete negotiations of cost proposal no later than DD/MM/YYYY; and (c) sign definitized modification by DD/MM/YYYY. *This paragraph is required for a UCA. Only the nonrecurring implementation costs will be definitized; VECP definitization will occur later.*
4. Except for the change herein, all other terms and conditions of the contract remain unchanged. *This paragraph avoids possible misinterpretations.*

Note: Highlighted text explains the purpose of each paragraph and is not intended to be included in the UCA.

**Figure 2. Example B: UCA for Implementing Long-Term, Complex VECs; Government Funds All NRE Up Front**

As soon as possible after final cost has been negotiated and the final statement of work prepared, a modification is made to the Year 1 contract to definitize the NRE and allow the contractor to complete the effort. The total Government obligation includes the negotiated NRE, which was \$18M in this example. Table 2 shows the results of the Year 1 modification. Net acquisition savings are –\$18M to reflect the additional Government obligation in Year 1. The \$498M figure shown for Government obligation represents the sum of the original \$480M contract and the \$18M NRE effort.

**Table 2. Example B:  
Year 1 Missile Procurement Changes;  
Government Funds All NRE Up Front**

	Year 1 Modification
Item Quantity	400
Average Unit Price	\$70K
Total Item Cost	\$28M
Net Acquisition Savings	–\$18M
Government Obligation	\$498M

At some point during the performance of the Year 2 contract, enough information will be available to definitize the VECP. The contractor will submit a VECP cost

proposal addressing savings throughout the sharing period. The proposal will be negotiated and the Year 2 contract will be modified to become the “instant” contract (i.e., the contract used to pay the shared savings to the contractor).<sup>21</sup> That definitization modification will

- Establish per-unit savings for the instant and future contracts as applicable,<sup>22</sup>
- Establish the share ratio and the share period,
- Adjust item cost as appropriate, and
- Adjust negative instant contract savings.

Table 3 reflects the Year 2 modification (after the VECP is applied). The VECP is applied to only 200 of the 400 units scheduled to be supplied under this option. The units unaffected by the VECP are still priced at \$70K. The remaining 200 units that will contain the new VECP configuration have an average price of \$35K. That represents a savings of \$7M, which the Government will keep as the start of recoupment of its \$18M investment.<sup>23</sup> Since the Government keeps this \$7M, it must obligate only \$473M, not the full \$480M. At the end of the Year 2 contract, the negative instant contract savings is \$11M. Since the Government paid the entire NRE, assume the contractor will receive 25 percent of the savings. This will be part of the Year 2 modification, but will not be acted upon until Year 3, when there will be savings to share.

The Year 3 contract will reflect the information in Table 4. The average unit price is \$35K since all delivered units will reflect the modifications. This implies a total savings of \$14M for the item. After all of the NRE are reimbursed, there will be a \$1M net acquisition savings to be shared according to the established sharing ratio. The Government must obligate enough money to buy all of the Missile Y Systems (\$466M) and to pay the contractor for its share of the savings (\$0.25M). An administrative modification is made to the Year 2 contract (the instant contract) to pay the contractor.

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<sup>21</sup> This example funds the NRE through a CLIN in the existing contract. If it had been funded via a separate engineering services contract, the Government and contractor should enter a simple Memorandum of Understanding (MOU) outlining essentially how the eventual VECP will be treated. The MOU would look much like the sample contract modification in Figure 2. Shared savings would still occur in the Year 2 contract as shown.

<sup>22</sup> Instant and future per-unit savings are defined as instant unit cost reduction and future unit cost reduction in FAR 52.248-1 (b) (1) and (b) (3).

<sup>23</sup> The additional \$2M Government investment for testing will not occur until Year 3.

**Table 3. Example B: Year 2 Missile Procurement Changes;  
Government Funds All NRE Up Front**

	Year 1 Modification	Year 2 Modification
Item Quantity	400	400 <sup>a</sup>
Average Unit Price		
Units without VECP	\$70K	\$70K
Units with VECP	—	\$35K
Total Item Cost	\$28M	\$21M
Unreimbursed Investments	—	-\$18M
Unit Price Savings	—	\$7M
Net Acquisition Savings	-18M	-11M
Government Obligation	\$498M	\$473M

<sup>a</sup> Made up of 200 units with VECP and 200 units without.

**Table 4. Example B: Year 3 Missile Procurement Changes;  
Government Funds All NRE Up Front**

	Year 1 Modification	Year 2 Modification	Year 3 Award
Item Quantity	400	400 <sup>a</sup>	400
Average Unit Price			
Units without VECP	\$70K	\$70K	
Units with VECP	—	\$35K	\$35K
Total Item Cost	\$28M	\$21M	\$14M
Unreimbursed Investments	—	-\$18M	-\$11M
Unit Price Savings	—	\$7M	\$14M
Other Government Cost	—	—	\$2M
Net Acquisition Savings	-\$18M	-\$11M	\$1M
Savings Retained by Government	—	—	\$750K
Savings Paid to Contractor on Instant Contract	—	—	\$250K
Government Obligation	\$498M	\$473M	\$466.25M

<sup>a</sup> Made up of 200 units with VECP and 200 units without.

The Year 4 contract is awarded as Table 5 shows. As in Year 3, there will be a \$14M savings on the item. Enough money has to be obligated to buy the system (\$466M) and to pay the contractor for its share of the savings (\$3.5M). An administrative modification is made to the Year 2 instant contract to pay the contractor. Years 5 and 6 are identical to Year 4.

**Table 5. Example B: Year 4 Missile Procurement Changes;  
Government Funds All NRE Up Front**

	Year 1 Modification	Year 2 Modification	Year 3 Award	Year 4 Award
Item Quantity	400	400 <sup>a</sup>	400	400
Average Unit Price				
Units without VECP	\$70K	\$70K	—	—
Units with VECP	—	\$35K	\$35K	\$35K
Total Item Cost	\$28M	\$21M	\$14M	\$14M
Unreimbursed Investments	—	-\$18M	-\$11M	—
Unit Price Savings	—	\$7M	\$14M	\$14M
Other Government Cost	—	—	\$2M	—
Net Acquisition Savings	-\$18M	-\$11M	\$1M	\$14M
Savings Retained by Government	—	—	\$750K	\$10.5M
Savings Paid to Contractor on Instant Contract	—	—	\$250K	\$3.5M
Government Obligation	\$498M	\$473M	\$466.25M	\$469.5M

<sup>a</sup> Made up of 200 units with VECP and 200 units without.

### 3. Advantages

Advantages to the Government of the best practice in this example are:

- Involvement in the process to solve the problem, thereby attaining strong assurance that the final product will meet requirements (for cost savings, capability, etc.);
- Ultimate savings and increased capability; and
- Reduced obsolescence.

Advantages to the contractor are:

- Assured reimbursement for NRE;
- Improved likelihood of future sales, generating a share of future savings to increase profit;
- Opportunity to build the latest configuration using modern technology; and
- A share of the savings.

## **D. LONG-TERM, COMPLEX VECPS WHERE THE GOVERNMENT FUNDS SOME NRE UP FRONT**

The only scenario difference between this situation and Example B is that the Government funds only \$3M of the \$18M NRE requirement in Year 1. Table 1 still applies as the base case.

### **1. Best Practice**

A UCA, with appropriate caveats, encourages VECPs that enable mutually beneficial work to be started quickly. If the Government is able to provide some funding for NRE, and both parties are interested, the Government could use the funding as leverage to increase its share of the savings (above the minimum allowable by the FAR) and start the process faster. The contractor may fund negative instant contract savings in anticipation of recouping that investment out of future savings if Government funds are not sufficient for the entire NRE effort.<sup>24</sup>

### **2. Example C**

Similar to Example B, the contractor in Example C should submit a VECP that includes an NTE cost to develop and implement the change along with preliminary VE savings estimates. The proposal asks the Government to approve the initial NRE effort and to incorporate the VECP. The UCA that the Government issues to do this is more complex than in Example B since the Government pays only part of the NRE. Paragraphs are added to document that the Government will obligate only \$3M for the NRE; the Government plans to pay back contractor investment via shared savings from the VECP; limitations of liability on repaying the contractor's investment; and the VECP share ratio (see Figure 3).

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<sup>24</sup> The Government cannot encourage or require contractors to supplement DoD appropriations by financing the implementation cost of a value engineering change.

The purpose of this modification to Contract XYZ is to approve the incorporation of Value Engineering Change Proposal (VECP) X, Rev. 1, dated DD/MM/YYYY, identified as the IR Seeker Redesign, into the Missile Y System Configuration Baseline on a Not-to-Exceed (NTE) basis. Accordingly, Contract XYZ is modified as follows:

1. The parties agree that this Supplemental Agreement establishes (1) an NTE amount of \$18M for the total nonrecurring implementation cost of the IR Seeker Redesign in accordance with the Contractor's proposal dated DD/MM/YYYY and (2) an estimated amount of \$2M for Government testing and other costs based on the assumptions in the attachment. *This paragraph protects the Government by limiting contractor expenditures that it is obligated to pay. It is important for the Government to review the assumptions carefully because situations have occurred where higher than anticipated Government testing cost rendered the VECP economically unacceptable, in which case the Government should not accept it. This paragraph also protects the contractor by limiting the scope of the work to that defined in the proposal.*
2. The Government hereby establishes CLIN 000XXX, which authorizes an NTE amount of \$3M of the nonrecurring implementation addressed in paragraph 1. This funding shall be the Government's share of this effort. The Contractor agrees to provide funding for the remainder of the nonrecurring implementation. *This paragraph establishes that the Government will pay only \$3M of the nonrecurring implementation costs. Adding a funded effort to a contract requires a CLIN. The CLIN will have to have acceptance criteria (not addressed in the example), which at this point probably would not yet be determined because it will be addressed in the formal cost proposal for this effort.*
3. It is anticipated that the Contractor's share of the nonrecurring implementation will be funded out of savings from the incorporation of this VECP in subsequent production contracts. The Government agrees not to seek any pricing reduction in future contracts resulting from this VECP until the contractor recovers its nonrecurring implementation investment as negative instant contract savings. However, except for agreeing to share VE savings on any future contracts awarded, including this effort, the Government neither guarantees that there will be future contracts awarded or that there will be future savings resulting from this VECP in these future contracts. Except for its rights under paragraph 4 below, the contractor agrees to accept these risks and hold the Government harmless for its investments in this VECP should future contracts not be awarded, future savings not be adequate to recover the contractor's investment, or the VECP not be successfully qualified as per paragraph 5 below. *This paragraph identifies how the contractor will be paid back for its share of the investment. It limits the Government's liability for not having the full \$18M. It is important to the contractor because the Government agrees to recognize some negative instant contract savings on future contracts, if they are awarded. It documents that nonrecurring engineering will not all be repaid out of the current contract. It also limits Government liability if there are no future contracts.*
4. **Limitations of Liability:** In the event of abandonment of the aforementioned VECP before completion, the Contractor's nonrecurring cost in excess of the \$3M associated with the VECP shall be considered an allowable cost to the extent that it does not exceed the funded value of this contract. The Government agrees to insert this same provision in all future contracts incorporating this VECP until the contractor's NRE have been fully recouped. Furthermore, if the Government does not award follow-on contracts within 90 days of the time period anticipated by the parties, as set forth in the attachment, the contractor may opt to suspend or discontinue any remaining nonrecurring implementation effort on this VECP that is not required under CLIN 000XXX without further liability. *This paragraph provides additional assurance to the contractor in case of termination. A key protection is that the contractor does not have to complete a development effort at its own expense with no chance of recovering its investment through future savings.*
5. **Definitization Schedule:** The parties agree they plan to definitize this effort as follows: (a) submit final definitized nonrecurring implementation cost proposal with a detailed statement of work not later than DD/MM/YYYY; (b) complete negotiations of cost proposal no later than DD/MM/YYYY; and (c) sign definitized modification by DD/MM/YYYY. *This paragraph is required for a UCA.*
6. Because of the contractor's willingness to share in the NRE, the Government agrees to the contractor receiving an X percent share in all VE savings that would normally be subject to sharing pursuant to FAR 52.248-1 and FAR Part 48. *Since the Government is paying only a small portion of the nonrecurring investment, the contractor's share of the savings should be at least 50%.*
7. Except for the change herein, all other terms and conditions of the contract remain unchanged. *This paragraph avoids possible misinterpretation.*

Note: Highlighted text explains the purpose of each paragraph and is not intended to be included in the UCA.

### Figure 3. Example C: UCA for Implementing Long-Term, Complex VECPS; Government Funds Some NRE Up Front

In Example C, it will usually take longer than it would in Example B to prepare the NTE proposal and issue the UCA. Agreement has to be reached on how much money the Government will spend, what it will buy, and the sharing ratio. This typically adds 30 to

60 days to the process. About 6 months later, after the final cost is negotiated and the final statement of work is complete, a modification is made to the Year 1 contract to definitize the NRE and allow the contractor to complete the effort. The total Government obligation includes the negotiated NRE contribution by the Government, which is \$3M in this example. Table 6 shows the results of the Year 1 modification. Net acquisition savings are -\$18M, as was the case in Example B. The \$483M figure shown for Government obligation represents the sum of the original \$480M contract and the \$3M NRE Government contribution.

**Table 6. Example C: Year 1 Missile Procurement Changes;  
Government Funds Some NRE Up Front**

	Year 1 Modification
Item Quantity	400
Average Unit Price	\$70K
Total Item Cost	\$28M
Net Acquisition Savings	-\$18M
Contractor Share	-\$15M
Government Share	-\$3M
Government Obligation	\$483M

At some point during the performance of the Year 2 contract, enough information will be available to definitize the VECP. The contractor will submit a VECP cost proposal identifying savings throughout the sharing period. The proposal will be negotiated and the Year 2 contract will be modified to become the “instant” contract (i.e., the contract used to pay savings to the contractor). That definitization modification will

- Establish per-unit savings for the instant and future contracts as applicable,
- Establish the share ratio and the share period,
- Adjust item cost as appropriate, and
- Adjust negative instant contract savings.

Table 7 reflects the Year 2 modification (after the VECP is applied). The VECP is applied to only 200 of the 400 units scheduled to be supplied under this option. The units unaffected by the VECP are still priced at \$70K. The remaining 200 units that will contain the new VECP configuration have an average price of \$35K. That represents a savings of \$7M, which will be paid to the contractor to begin recoupment of its \$15M investment. (The contractor is reimbursed before the Government.) The Government must obligate the full \$480M. At the end of the Year 2 contract, the negative instant

contract savings is \$11M. Since the Government paid only a small portion of the NRE, assume that the contractor will receive 50 percent of the savings. This will be part of the Year 2 modification, but will not be acted upon until Year 3 when there will be some savings to share.

**Table 7. Example C: Year 2 Missile Procurement Changes; Government Funds Some NRE Up Front**

	Year 1 Modification	Year 2 Modification
Item Quantity	400	400 <sup>a</sup>
Average Unit Price		
Units without VECP	\$70K	\$70K
Units with VECP	—	\$35K
Total Item Cost	\$28M	\$21M
Unreimbursed Investments	—	-\$18M
Unit Price Savings	—	\$7M
Net Acquisition Savings	-\$18M	-\$11M
Contractor Share	-\$15M	-\$8M
Government Share	-\$3M	-\$3M
Government Obligation	\$483M	\$480M

<sup>a</sup> Made up of 200 units with VECP and 200 units without.

The Year 3 contract will reflect the information in Table 8. The average unit price is \$35K since all delivered units will reflect the modifications. This implies a total savings of \$14M for the item. After all NRE are paid back (including the \$2M for testing), there will be a \$1M net acquisition savings to be shared according to the established sharing ratio. The Government will have to obligate enough money to buy all of the Missile Y Systems (\$466M) and to pay the contractor for its share of the savings (\$0.5M) and to repay the remainder of the NRE (\$8M). An administrative modification is made to the Year 2 contract (the instant contract) to actually pay the contractor.

The Year 4 contract is awarded as Table 9 shows. As in Year 3, there will be a \$14M savings on the item. Enough money has to be obligated to buy the system (\$466M) and to pay the contractor for its share of the savings (\$7M). There is an administrative modification made to the Year 2 instant contract to actually pay the contractor; Years 5 and 6 are identical to Year 4.

**Table 8. Example C: Year 3 Missile Procurement Changes;  
Government Funds Some NRE Up Front**

	Year 1 Modification	Year 2 Modification	Year 3 Award
Item Quantity	400	400 <sup>a</sup>	400
Average Unit Price			
Units without VECP	\$70K	\$70K	
Units with VECP	—	\$35K	\$35K
Total Item Cost	\$28M	\$21M	\$14M
Unreimbursed Investments	—	-\$18M	-\$11M
Unit Price Savings	—	\$7M	\$14M
Other Government Cost	—		\$2M
Net Acquisition Savings	-\$18M	-\$11M	\$1M
Savings Retained by Government	—	—	\$0.5M
Savings Paid to Contractor on Instant Contract	—	—	\$0.5M
Government Obligation	\$483M	\$480M	\$474.5M

<sup>a</sup> Made up of 200 units with VECP and 200 units without.

**Table 9. Example C: Year 4 Missile Procurement Changes;  
Government Funds Some NRE**

	Year 1 Modification	Year 2 Modification	Year 3 Modification	Year 4 Modification
Item Quantity	400	400 <sup>a</sup>	400	400
Average Unit Price				
Units without VECP	\$70K	\$70K	—	—
Units with VECP	—	\$35K	\$35K	\$35K
Total Item Cost	\$28M	\$21M	\$14M	\$14M
Unreimbursed Investments	—	-\$18M	-\$11M	—
Unit Price Savings	—	\$7M	\$14M	\$14M
Other Government Cost	—	—	\$2M	—
Net Acquisition Savings	-\$18M	-\$11M	\$1M	\$14M
Savings Retained by Government	—	—	\$0.5M	\$7M
Savings Paid to contractor on Instant Contract	—	—	\$0.5M	\$7M
Government Obligation	\$483M	\$480M	\$474.5M	\$473M

<sup>a</sup> Made up of 200 units with VECP and 200 units without.

### 3. Advantages

Advantages to the Government of the best practice in this example are:

- Involvement in the process to solve the problem, thereby attaining strong assurance that the final product will meet requirements (for cost savings, capability, etc.);
- Ultimate savings and increased capability; and
- Reduced obsolescence.

Advantages to the contractor are:

- Assured reimbursement for NRE;
- Improved likelihood of future sales, generating a share of future savings to increase profit;
- Opportunity to build the latest configuration using modern technology; and
- A share of the savings.

### E. LONG-TERM, COMPLEX VECPS WHERE THE GOVERNMENT FUNDS NO NRE

The only scenario difference between this example and Example B is that the Government funds none of the \$18M NRE requirement in Year 1. Table 1 still applies as the base case.

#### 1. Best Practice

A UCA, with appropriate caveats, encourages VECPs that enable mutually beneficial work to be started quickly. The contractor may fund negative instant contract savings out of future savings if Government funds are not available.<sup>25</sup> The delivery of at least one item in the basic contract is extended to incorporate the VECP. The UCA mitigates some contractor risk, allows the contractor to charge the basic contract for some of the development efforts, and enables the Government to get work started quicker when funds are not available.

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<sup>25</sup> As previously noted, the Government cannot encourage or require contractors to supplement DoD appropriations by financing the implementation cost of a value engineering change.

## 2. Example D

For Example D, the contractor should submit a VECP that (1) includes an NTE cost to develop and implement the change along with preliminary VE savings estimates and (2) asks the Government to approve the VECP (like in Example A). The UCA issued by the Government will modify the contract in a way that combines elements from Examples A and C. Paragraphs in the modification (like in Example A) document that the Government plans to pay back contractor investment via shared savings from the VECP and limitations of liability on repaying the contractor's investment. There is also a paragraph on the delivery schedule and one that states that there will be at least one modified unit delivered on this contract so the contractor can charge some of the VE effort to this contract (see Figure 4).

This process to submit the NTE proposal and agree on the modification may take 30 days longer to complete than the 6 months in previous examples. Agreement on what constitutes a success will take time to negotiate. In the previous two examples, where the Government contributed funds to the NRE, the process is easier because of the direct Government involvement. At some point during the performance of the Year 2 contract, after successful testing, a modification is made to the Year 1 contract to definitize the VECP.<sup>26</sup> The Year 1 contract becomes the "instant" contract in this example. That definitization modification will

- Establish per-unit savings for the instant and future contracts as applicable,
- Establish the share ratio and the share period,
- Adjust item cost as appropriate, and
- Adjust negative instant contract savings.

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<sup>26</sup> While this example makes Year 1 the instant contract, in some cases it may be preferable to make Year 2 the instant contract by factoring Year 1 costs into the modification of the Year 2 contract.

The purpose of this modification to Contract XYZ is to approve the incorporation of Value Engineering Change Proposal (VECP) X, Rev. 1, dated DD/MM/YYYY, identified as the IR Seeker Redesign, into the Missile Y System Configuration Baseline on a Not-to-Exceed (NTE) basis. Accordingly, Contract XYZ is modified as follows:

1. The parties agree that this Supplement Agreement establishes (1) an NTE amount of \$18M for the total nonrecurring implementation cost of the IR Seeker Redesign in accordance with the contractor's proposal dated DD/MM/YYYY and (2) an estimated amount of \$2M for Government testing and other costs based on the assumptions in the attachment. *This paragraph protects the Government by limiting the expenditures it is obligated to pay. It is important for the Government to review the assumptions carefully because situations have occurred where higher-than-anticipated Government testing cost rendered the VECP economically unacceptable, in which case the Government should not accept it. This paragraph also protects the contractor by limiting the scope of the work to that defined in the proposal.*
2. It is anticipated that the contractor's share of the nonrecurring implementation will be funded out of savings from the incorporation of this VECP in this and subsequent production contracts. The Government agrees not to seek any pricing reduction in future contracts resulting from this VECP until the contractor recovers its nonrecurring implementation investment as negative instant contract savings. However, except for agreeing to share VE savings on any future contracts awarded, including this effort, the Government guarantees neither that there will be future contracts awarded nor that there will be future savings resulting from this VECP in these future contracts. Except for its rights under paragraph 4 below, the contractor agrees to accept these risks and hold the Government harmless for its investments in this VECP should future contracts not be awarded, future savings not be adequate to recover the contractor's investment, or the VECP not be successfully qualified as per paragraph 5 below. *This paragraph identifies how the contractor will be paid back for its share of the investment. It limits the Government's liability for not funding the full \$18M. It is important to the contractor because the Government agrees to recognize some negative instant contract savings on future contracts, if they are awarded. It documents that nonrecurring engineering will not all be repaid out of the current contract. It also limits Government liability if there are no future contracts.*
3. The parties further agree that pending definitization, a Not-Less-Than (minimum) per-unit cost savings for incorporation of this IR seeker into future Missile Y System contracts is established as provided in the attachment. *This paragraph assures savings by establishing a minimum per-unit savings. The attachment (the referenced proposal) sets conditions for how savings are calculated (e.g., function of quantity and dates). The minimum savings are defined by the contractor in the proposal; a conservative approach, with risk mitigation, should be taken. Agreeing to these conditions is time-consuming; consequently this paragraph may not be needed if there is high confidence that savings will exceed the nonrecurring investment.*
4. The VECP shall be incorporated into at least one unit of this contract and the delivery schedule of this contract will change per the Rev. 1 reference to accommodate delayed delivery of said units until qualification testing is completed. As subsequent production contracts are awarded, it is envisioned that the parties intend incorporation of the aforementioned VECP into as many units of said contracts as possible. To the extent that the delivery schedule and other terms of said contracts need to be modified to reflect this, the parties agree to consider them. *This paragraph allows the contractor to charge the VE effort to both the current contract and future contracts within its funding limits.*
5. Limitations of Liability: The approval of the aforementioned VECP is contingent on said VECP performing as prescribed in "Statement of Work" in the VECP proposal and all qualification testing. Should the subject VECP fail to pass said test to the satisfaction of the Government, the Government may withdraw the approval provided by this modification without incurring any liability and the contractor shall be liable to deliver the Missile Y System configuration originally contracted for, provided the contractor is allowed a reasonable time to correct any difficulties discussed in qualifications testing and fails to do so. Furthermore, if the Government does not award follow-on contracts within 90 days of the time period anticipated by the parties, as set forth in the attachment, the contractor may opt to suspend or discontinue any remaining nonrecurring implementation effort on this VECP that is not required under VECP X, Rev. 1, without any further liability. *This paragraph provides additional assurance to the contractor in case of termination. A key protection is that the contractor does not have to complete a development effort at its own expense with no chance of recovering its investment through future savings.*
6. In the event of abandonment of the aforementioned VECP before completion, the nonrecurring implementation cost associated with the VECP shall be considered an allowable cost to the extent that they do not exceed the funded value of the contract. *This paragraph provides additional assurance to the contractor in case of termination.*
7. The contractor agrees to provide a firm fixed price cost proposal that addresses this agreement and all future shares of savings within 90 days of a request by the contracting officer, but in no case later than 60 days following successful qualification testing. *This paragraph replaces the definitization schedule found in the other UCAs.*
8. This modification shall not result in any change to the contract price or funding. *This paragraph is included in the UCA when the Government is not increasing the value of the contract. In this example, the contractor will be reimbursed for the NRE from the savings.*

Note: Highlighted text explains the purpose of each paragraph and is not intended to be included in the UCA.

**Figure 4. Example D: UCA for Implementing Long-Term, Complex VECPs; Government Funds No NRE**

The total contract value remains at \$480M. The VECP is applied to only 1 of the 400 units scheduled to be supplied under this option. It is priced at \$35K. The remaining 399 units unaffected by the VECP are still priced at \$70K. Net acquisition savings are -\$17.965M, which is \$35K less than the \$18M in Examples B and C. Assume the contractor will receive 75 percent of the savings in this example. These will be recognized in the Year 1 modification, but will not be acted upon until Year 3, when there will be some savings to share. The contractor share of 75 percent is unusual. In this example, it is based on the contractor having large NRE over a long period of time on a high-risk endeavor. Table 10 shows the results of the Year 1 modification.

**Table 10. Example D:  
Year 1 Missile Procurement Changes;  
Government Funds No NRE**

	Year 1 Modification
Item Quantity	400 <sup>a</sup>
Average Unit Price	
Units without VECP	\$70K
Units with VECP	\$35K
Total Item Cost	\$27.965M
Unit Price Savings	\$35K
Net Acquisition Savings	-\$17.965M
Contractor Share	-\$17.965M
Government Share	—
Government Obligation	\$480M

<sup>a</sup> Made up of 1 unit with VECP and 399 units without.

Table 11 reflects the Year 2 contract. The VECP is applied to only 200 of the 400 units scheduled to be supplied under this option. The units unaffected by the VECP are still priced at \$70K. The remaining 200 units that will contain the new VECP configuration have an average price of \$35K. That represents a savings of \$7M, which will be paid to the contractor as part of the recoupment of its \$18M investment. The Government must obligate the full \$480M. At the end of the Year 2 contract, the negative instant contract savings is \$10.965M (again a \$35K difference from the previous two examples). An administrative modification is made to the Year 1 contract (the instant contract) to actually pay the contractor.

**Table 11. Example D:  
Year 2 Missile Procurement Changes;  
Government Funds No NRE**

	Year 1 Modification	Year 2 Award
Item Quantity	400 <sup>a</sup>	400 <sup>b</sup>
Average Unit Price		
Units without VECP	\$70K	\$70K
Units with VECP	\$35K	\$35K
Total Item Cost	\$27.965M	\$21M
Unreimbursed Investments	—	-\$17.965M
Unit Price Savings	\$35K	\$7M
Net Acquisition Savings	-\$17.965M	-\$10.965M
Contractor Share	-\$17.965M	-\$10.965M
Government Share	—	—
Government Obligation	\$480M	\$480M

<sup>a</sup> Made up of 1 unit with VECP and 399 units without.

<sup>b</sup> Made up of 200 units with VECP and 200 units without.

The Year 3 contract option will be awarded as in Table 12. The average unit price is \$35K since all delivered units will reflect the modifications. This implies a total savings of \$14M for the item. After all NRE are paid back, including the \$2M for testing, net acquisition savings will be \$1.035M, to be shared according to the established sharing ratio. The Government will have to obligate enough money to buy all of the missiles (\$466M), to pay the contractor its share of the savings (\$0.77625M), and to repay the remainder of the NRE (\$12.965M). An administrative modification is made to the Year 1 contract (the instant contract) to actually pay the contractor.

The Year 4 contract is depicted in Table 13. As in Year 3, there will be a \$14M savings on the item. Enough money has to be obligated to buy the system (\$466M) and to pay the contractor for its share of the savings (\$10.5M). There is an administrative modification made to the Year 1 instant contract to actually pay the contractor. Years 5 and 6 are identical to Year 4.

**Table 12. Example D:  
Year 3 Missile Procurement Changes; Government Funds No NRE**

	Year 1 Modification	Year 2 Award	Year 3 Award
Item Quantity	400 <sup>a</sup>	400 <sup>b</sup>	400
Average Unit Price			
Units without VECP	\$70K	\$70K	—
Units with VECP	\$35K	\$35K	\$35K
Total Item Cost	\$27.965M	\$21M	\$14M
Unreimbursed Investments	—	-\$17.965M	-\$10.965M
Unit Price Savings	\$35K	\$7M	\$14M
Other Government Cost	—	—	\$2M
Net Acquisition Savings	-\$17.965M	-\$10.965M	\$1.035M
Savings Retained by Government	—	—	\$0.25875M
Savings Paid to Contractor on Instant Contract	—	—	\$0.77625M
Government Obligation	\$480M	\$480M	\$479.7413M

<sup>a</sup> Made up of 1 unit with VECP and 399 units without.

<sup>b</sup> Made up of 200 units with VECP and 200 units without.

**Table 13. Example D:  
Year 4 Missile Procurement Changes; Government Funds No NRE**

	Year 1 Modification	Year 2 Award	Year 3 Award	Year 4 Award
Item Quantity	400 <sup>a</sup>	400 <sup>b</sup>	400	400
Average Unit Price	—	—	—	—
Units without VECP	\$70K	\$70K	—	—
Units with VECP	\$35K	\$35K	\$35K	\$35K
Total Item Cost	\$27.965M	\$21M	\$14M	\$14M
Unreimbursed investments	—	-\$17.965M	-\$10.965M	—
Unit Price Savings	\$35K	\$7M	\$14M	\$14M
Other Government Cost	—	—	\$2M	—
Net Acquisition Savings	-\$17.965M	-\$10.965M	\$1.035M	\$14M
Savings Retained by Government	—	—	\$0.25875M	\$3.5M
Savings Paid to Contractor on Instant Contract	—	—	\$0.77625M	\$10.5M
Government Obligation	\$480M	\$480M	\$479.7413M	\$476.5M

<sup>a</sup> Made up of 1 unit with VECP and 399 units without.

<sup>b</sup> Made up of 200 units with VECP and 200 units without.

### 3. Advantages

Advantages to the Government of the best practice in this example are:

- Involvement in the process to solve the problem (e.g., reduce the cost of an expensive item and replace an obsolescent item);
- Assurance that the final product will meet requirements (for cost savings, capability, etc.); and
- Ultimate savings and increased capability.

Advantages to the contractor are:

- Assured reimbursement for NRE;
- Improved likelihood of future sales, generating a share of future savings to increase profit;
- Opportunity to build the latest configuration using modern technology; and
- A share of the savings.

## F. VECPS USING LEARNING CURVES AND INFLATION

Examples B, C, and D did not include adjustments for learning curves or inflation. Typically, on large production programs, the VECP is negotiated with both the “as is” and “to be” costs on learning curves. Since the “as is” cost is more mature, it most likely will have a relatively flat learning curve while the “to be” cost may have a steeper curve. Also, inflation takes place over time and the future savings will be subject to inflation, particularly if learning curves based on constant dollars are used. Consequently, it is not unusual for the settlement modification to include an inflation table that will inflate future savings when they are awarded.

### 1. Example E

This example uses the same quantities and NRE as in Example D. The details are shown in Table 14. The first line in Table 14 shows how the unit price changes (from the constant \$70K assumed in the previous examples) over time based on a 92.5 percent learning curve.<sup>27</sup> The second line shows how the \$35K “to be” unit price changes on the basis of a 91 percent learning curve. Typically the learning curve for the “to be” version

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<sup>27</sup> When using a learning curve, the formula  $y = Tx^b$  applies where  $y$  is the per-unit cost in year  $j$ ,  $x$  is the ratio of cumulative production through year  $j$  to production in the initial (baseline) year,  $T$  is the initial cost, and  $b$  is the slope. For a 92.5 percent learning curve,  $b$  is solved for in the equation  $0.925 = e^{b \ln 2}$ .

is not as steep as the original learning curve because of experience gathered. Table 14 entries for the next eight lines follow the same logic as Example D; the only difference is that the calculations are based on the unit price with learning. The line labeled “inflation factor” would be obtained from the appropriate Office of the Under Secretary of Defense (Comptroller) guidance. The last line shows the Government’s savings after inflation. Note the net acquisition savings in this example are smaller than those from Example D, even after inflation is included.

**Table 14. Example E:  
Missile Procurement with Learning Curves and Inflation**

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
“As Is” Unit Price Using 92.5% Learning Curve	\$70.00K	\$66.87K	\$66.87K	\$66.87K	\$66.87K	\$66.87K
“To Be” Unit Price Using 91% Learning Curve	\$35.00K	\$35.00K	\$30.14K	\$28.12K	\$26.86K	\$25.96K
Quantity (without VECP/ with VECP)	399/1	200/200	0/400	0/400	0/400	0/400
Cumulative Quantity (without VECP/ with VECP)	399/1	599/200 <sup>a</sup>	599/600	599/1000	599/1400	599/1800
Total Cost without VECP	\$28M	\$25.9M	\$24.75M	\$23.96M	\$23.36M	\$22.89M
Total Cost with VECP	\$27.97M	\$20.37M	\$12.06M	\$11.25M	\$10.74M	\$10.38M
Gross Savings	\$35K	\$5.53M	\$12.69M	\$12.71M	\$12.62M	\$12.51M
Government Cost	—	—	-\$2M	—	—	—
Net Acquisition Savings	-\$17.97M	-\$12.44M	-\$1.75M	\$10.96M	\$12.62M	\$12.51M
Contractor Share (75%)	—	—	—	\$8.22M	\$9.47M	\$9.38M
Government Share (25%)	—	—	—	\$2.74M	\$3.15M	\$3.13M
Inflation Factor	1	1.03	1.061	1.093	1.125	1.159
Government Share with Inflation	—	—	—	\$2.99M	\$3.54M	\$3.63M

Note: With the exception of the last row, all dollar figures in the table are constant dollars.

<sup>a</sup> Since only one unit with the VECP is produced in year 1, the calculations assume that initial production began in year 2 for learning curve purposes.

## 2. Advantages

The advantage to both the Government and contractor of the best practice in this example is that some savings occur naturally via learning curves and inflation may be factored in, so the VECP savings calculations will be more accurate.

## G. VECPS ON PERFORMANCE-BASED CONTRACTS

Using a VECP with a performance-based contract is beneficial when nonrecurring costs are greater than the savings on the current contract. In this situation, the VECP is

the only mechanism that enables the contractor to recoup its investment (in future contracts) and enables the Government to realize the benefits of the investment.

## **1. Best Practice**

VECPs should be allowed on performance-based contracts. Letters that agree to treat changes as a VECP on performance-based contracts should be issued where appropriate. The Government is committed to consider the VECP in future contracts only when the VECP meets every term of the offer. The following example demonstrates how both the Government and the contractor derived substantial benefits from using a VECP on a performance-based contract. These benefits would not have materialized without the VECP.

## **2. Example F**

For this example, a contractor has a performance-based contract to produce a system for the Government. The contractor is confident it can redesign and produce a modified system to decrease cost (by \$3,000 per unit), decrease weight, and improve performance. The NRE will be \$1.2M. A total of 500 systems are being procured on the current contract; assuming the change works as expected, the contractor will be able to deliver 300 systems using the old configuration and 200 modified systems. The follow-on contract was bid under the assumption of a minimum purchase of 800 systems; however, it appears the procurement will be held constant at 500 due to budget cuts.

In this example, before it will invest resources to make the change, the contractor needs some assurance the Government will cooperate to address a change as a VECP and share the savings on future lots. Using the numbers above, the contractor will lose \$600K on the instant contract.<sup>28</sup> Since the follow-on contract quantity is below the minimum bid by the contractor, the Government will request cost and pricing data. That implies the contractor would have to reduce the unit cost by \$3,000 and, consequently, be unable to recoup the loss from the prior contract.

Since the Government is concerned only with ultimate performance, not how the contractor will achieve it, there is generally no question about whether the NRE incurred

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<sup>28</sup> The NRE are \$1.2M. The contractor will be able to sell 200 modified units at a \$3,000 profit to recoup \$600K of the \$1.2M.

in implementing the change will be allowable. Thus, a contract modification is not necessary to start the work. A letter along the lines of Figure 5 is sufficient.

Dear Company X:

Based on information you provided in your DD/MM/YYYY proposal, System Z Program Office believes your concept for a Value Engineering Change Proposal (VECP) to redesign the battery using proven modern technology to reduce price, decrease weight, and improve performance has merit. Accordingly, the Government requests that you develop and submit a VECP for consideration and approval in accordance with procedures and information requirements set forth in FAR 52.248-1 and FAR Part 48, and. *This paragraph provides the contractor some assurance that its effort will be treated like a VECP, thereby decreasing its investment risk and increasing the likelihood of a share of the savings.*

The sharing arrangement for net acquisition savings is typically a matter for negotiation based on more complete information. However, I understand your desire for early agreement of net acquisition savings given the contractor investment involved. In this case, I am willing to agree on a 60 percent contractor's share of net acquisition savings for the first 1,500 units incorporating this VECP provided that, when submitted, the VECP is technically acceptable and meets the terms set forth in your DD/MM/YYYY letter. *It is important to elaborate on the sharing arrangement. If no information is provided, the contractor's risk increases. In this case, the 60 percent was based on an up-front investment that took 2 years to pay back. The contractor needed the 60 percent share to make the VECP economically viable.*

The terms of your DD/MM/YYYY letter include descriptive technical information regarding the extent of configuration changes, preservation and possible improvement of performance parameters, estimated savings per rear sub-assembly, estimated contractor development and implementation cost, and estimated Government costs resulting directly from developing and implementing the VECP. *The letter should reiterate the basis of the decision.*

Based on our latest discussions, you expect completion of successful qualifications testing for this VECP by MM/YYYY. This letter does not authorize changes to any contract, extension of any required delivery date under existing contracts, expenditure of funds beyond that allowable under existing contracts, or relief from any terms of existing contracts. Please direct any questions regarding this letter to the undersigned by phone or e-mail. *Additional points to be made.*

Signed by System Z Program Office Contracting Officer

Note: Highlighted text provides further explanation and is not intended to be included in the letter.

**Figure 5. Example F: Government Letter to a Contractor Indicating a Change Will Be Considered as a VECP**

After the work has begun, and a firm understanding of the cost is developed, a formal contract modification is prepared and signed. For the system example above, the actual modification began as follows:

The purpose of this modification is to add an H Clause for Value Engineering. In accordance with FAR 52.248-1 "Value Engineering (FEB 2000)," the following agreed to Value Engineering Change Proposal and associated criteria are incorporated into this Contract. Accordingly, Contract XYZ is modified as follows.

Several paragraphs may be included. In this particular case, paragraphs covered the following: the NRE and any remaining risks associated with its cost estimate; the VECP impact on the delivery schedule if any; contingency of the VECP on successful qualification testing; and allowing the contractor to be reimbursed for its NRE investment

in the event of contract termination. One important paragraph provides the terms of the settlement as follows:<sup>29</sup>

The Alternate No-Cost Settlement method as outlined under FAR 52.248-1, paragraph (i) (5), applies. It is recognized that the contractor will keep all the estimated savings of \$623,805 on the instant contract with no unit price reduction to {specifically identified} units. The Government will keep all savings on future {system name} contracts, which could result in a potential savings of \$2,772,428 over a five year period based upon current budget and quantity projections of future buys. The Government is not obligated to award any future production lots and the contractor is not obligated to continue the effort if future lots are not awarded.

### **3. Advantages**

Advantages to the Government of the best practice in this example are:

- Lower cost,
- Ability to benefit from longer-term cost-reduction efforts, and
- Improved capabilities.

Advantages to the contractor are:

- Reduced investment risk,
- Additional profit from share of savings, and
- Ability to undertake longer-term cost-reduction efforts.

## **H. VECPS ON INCENTIVE CONTRACTS**

When a VECP is awarded on a contract with incentive clauses, the contract should be modified in a way that does not reward the contractor twice for the same activity while maintaining the desired incentive structure. The FAR states that payments to the contractor generated from a VECP should not be rewarded under any other clause of the contract.

### **1. Best Practice**

The Government should encourage VECPs on contracts with incentives. For contracts with no direct cost-based incentives, there is no potential for double rewards. The incentive structure is designed to encourage certain desirable behavior that is

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<sup>29</sup> Note that the savings figures (as well as NRE costs) in the contract modification are not the same as the estimates at the start of the VECP. This is a typical situation.

complementary to VECs. When there are cost-based incentives, there may be circumstances where both the Government and the contractor benefit from using the VEC clause in the contract. When a VEC is approved, the cost-based portion of the incentive pool should be adjusted so the contractor is not rewarded twice for the same activity. The following two examples illustrate these points.

## 2. Example G

On fixed price incentive, cost plus incentive fee, and incentive-based design-to-cost contracts; the contractor's profit is a function of the difference between actual and target costs. Profits are higher when the target cost is met or when actual costs are below the target costs. Profits are smaller (and may be zero or negative) if actual costs are substantially above the target. The use of VECs with these types of contracts is fully explained in FAR 52.248-1 (f) and (g) (3) with further clarification in paragraph (k). VECs should be encouraged because the contractor has no claim on collateral, concurrent, or future contract savings without them. The following two bullets provide numerical examples:

- Consider the situation of a contract using a design-to-cost target and incentive where there is an 80/20 incentive share ratio. The target cost is \$100M with an associated target profit of \$10M and a ceiling of \$125M. Assume there have been unanticipated problems and the actual cost will be \$130M. Also assume there is a VEC possibility that will reduce the cost by \$0.7M, after a \$0.5M of NRE.<sup>30</sup> If the change were not treated as a VEC, the contractor would cut its losses by only \$0.2M in the first year and there would be no opportunity for collateral, concurrent, or future savings.<sup>31</sup> Therefore, the contractor would probably not make the change unless it were treated like a VEC.
- Using the same situation as above, assume the contractor realized some unanticipated benefit and instead of \$130M, the actual cost will be \$80M. That implies the contractor's profit will be \$14M.<sup>32</sup> Implementation of the VEC will reduce the total cost to \$79.8M and increase the profit to \$14.04M.<sup>33</sup>

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<sup>30</sup> Typically, such a design-to-cost target is used in the early stages of production. Quantities on the current contract would therefore be too small to generate substantial shared savings.

<sup>31</sup> If this is not a performance-based contract and the contractor has to submit an ECP to make the change, the contractor would have to give the entire \$0.2M back to the Government.

<sup>32</sup> Target profit of \$10M plus 20 percent of the \$20M below the target cost.

<sup>33</sup> Target profit of \$10M plus 20 percent of the \$20.2M below the target cost.

Unless the contractor was able to secure a share of future savings, it would defer the changes to a future contract.

### 3. Example H

A contractor is producing engines on a contract with an award fee, 25 percent of which is based on cost. That part or percentage of the award fee pool attributable to the VE change should be reduced by 25 percent and the contractor is awarded the VECP savings under the VECP clause.

Award fee contracts include a pool of money that the contractor earns if certain conditions are met (e.g., 25 percent based on production quality/process performance, 25 percent based on management performance, 25 percent based on cost performance, and 25 percent based on schedule performance). The size of the incentive pool is calculated as a percentage of the value of specified contract line items (assume 3 percent for this example).

Company X has a contract with the Government to produce engines. The Government accepted a VECP in accordance with FAR 52.248-1, and the VECP shall be incorporated in all deliveries under CLIN 000XXX. The VECP approved the addition of an alternate source for the fan blades in the engine. This change would lower the engine unit price from \$98,036 to \$91,596. Based on a quantity of 83, the total CLIN 000XXX contract price for the engines is reduced from \$8,136,988 to \$7,602,468 for a net reduction of \$534,520. All parties agree that the nonrecurring implementation cost for the VECP is \$46,812. Therefore the net acquisition savings is \$487,708. Assuming the Government and contractor each agreed to receive 50 percent of the savings, Company X would receive \$243,854 as its VECP shared savings.

Based on a 3% award fee for CLIN 000XXX, the award fee associated with the savings would be 3% of \$487,708 or \$14,632. Since cost represents 25 percent of the award fee in this example, the award fee pool for cost performance should be reduced by 25 percent of \$14,632 or \$3,658.<sup>34</sup>

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<sup>34</sup> The award fee pool for cost performance will be reduced from \$61,028 to \$57,370. It remains a substantial incentive for further cost savings.

#### **4. Advantages**

Advantages to the Government of the best practice in these examples are:

- The contractor is not rewarded twice for the same activity;
- The existing incentive structure is maintained and desired behaviors continue to be motivated; and
- Costs are reduced as quickly as possible.

The advantage to the contractor is that options for incentives using VECs as well as other incentive clauses are preserved.

#### **I. VECs ON DEVELOPMENT CONTRACTS**

Another misconception is that VECs apply only to production contracts. Whenever a new development contract is awarded, the contractor's systems engineering process leads to trade-offs to meet the cost and schedule requirements of the contract. Even under circumstances with exceptionally low risk, there is usually no time or resources for a parallel effort to use an alternative (emerging) technology that is expected to perform better at less cost. VECs are an effective mechanism for funding such parallel efforts as long as the Government is satisfied that the original solution was the best available at the time.

##### **1. Best Practice**

Permit contractors to start a company-funded parallel VEC effort on development contracts to offer a VE alternative to a high-cost part of the system, like a missile seeker, as soon as possible after the development is completed.<sup>35</sup> The Government should monitor progress. When companies will not undertake such a parallel effort, a VEC on development contracts should be mandated by paying for the VE activity, under FAR 52.248-1, Alternate I or II.

##### **2. Advantages**

Advantages to the Government of the best practice in this case are:

- Under a mandatory VEC, the contractor gets a smaller share of the savings;

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<sup>35</sup> Support for such a parallel effort should come from both the contracting officer and the Government program office.

- Shortly after the new system is qualified, a VECP can be offered to change the system to lower the cost and improve performance;
- The Government can get an improved system much earlier than normal while having its costs paid out of the savings; and
- A VECP on a development contract offers the greatest opportunity for savings because it implements early and can affect the largest number of units.

Advantages to the contractor are:

- An opportunity to share in savings;
- A competitive advantage in being able to build a more advanced system earlier; and
- Improved customer relations by working with the Government on the VECPs.

## **J. CONCLUSION**

This guide provides contracting officers with information about how VECPs can be processed in today's complex acquisition environment. The widespread dissemination and use of this information, along with the sharing of other knowledge and experience from the past and the future, will help advance strategic objectives for the Defense Department and provide increased profit and other benefits to the contractor.

Effective knowledge management means intentionally using intellectual assets to improve organizational performance through increased efficiency, effectiveness, and innovation. It is aimed at linking knowledge seekers with knowledge sources (both written and experiential). E-enabled communities of practice (CoPs) are proven vehicles for making these connections, for linking people with experience to others who can benefit from their insight and knowledge, and for nurturing a culture that facilitates two-way communication and sharing of knowledge. Communities are bound by a common goal and purpose and supported by a desire to share experiences, insights, and best practices.

Such a knowledge management approach is being applied to VE. A CoP, initially focused on VECPs, has been organized to help practitioners share and learn from one another, face-to-face and virtually.<sup>36</sup> The CoP will help navigate the VECP process, improve the probability of successful VECP evaluations, provide assistance and answers to technical questions, and serve as a forum for disseminating the latest information.

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<sup>36</sup> The CoP can be accessed by going to the Defense Acquisition University's Acquisition Community Connection Web site at <https://acc.dac.mil/vecp>.

Contracting officers, VE practitioners, program offices, and industry are all encouraged to use this CoP to share and build on the material contained in this guide.

**APPENDIX A:**  
**DOD POLICY MEMORANDUM “VALUE ENGINEERING CHANGE  
PROPOSALS—ACTION TO FACILITATE IMPLEMENTATION”**

**OFFICE OF THE UNDER SECRETARY OF DEFENSE**

3000 DEFENSE PENTAGON  
WASHINGTON, DC 20301-3000

ACQUISITION AND  
TECHNOLOGY

June 10, 1997

DP/DSPS

MEMORANDUM   DIRECTOR OF DEFENSE AGENCIES  
FOR

DEPUTY FOR ACQUISITION AND BUSINESS MANAGEMENT,  
ASN(RD&A)/ABM

DEPUTY ASSISTANT SECRETARY OF THE AIR FORCE  
(CONTRACTING), SAF/AQC

ASSISTANT DEPUTY ASSISTANT SECRETARY OF THE ARMY  
(PROCUREMENT)/DIRECTOR FOR CONTRACTING

DEPUTY DIRECTOR (ACQUISITION) DEFENSE LOGISTICS  
AGENCY

SUBJECT: Value Engineering Change Proposals - Action to Facilitate Implementation

My memorandum of April 10, 1997, authorized a two year deviation from Federal Acquisition Regulation (FAR) requirements to encourage value engineering through increased incentives. The purpose of this memorandum is to clarify the policy on pricing value engineering changes.

The Value Engineering Process Action Team (VEPAT) reported to the Defense Manufacturing Council (DMC) in March, 1997 that a barrier to value engineering implementation is the time required for pricing changes. A second reported barrier is that procurement policies prevent implementation of a value engineering change proposal before pricing is complete

Neither the FAR nor the DFARS restrict the implementation of a value engineering change proposal VECP before an equitable adjustment is negotiated. FAR 43.204 requires contracting officers to negotiate equitable adjustments resulting from change orders in the shortest practicable time. Defense Federal Acquisition Regulation Supplement (DFARS) 217.7401(a)(2) excludes VECPs from the restriction on the use of undefinitized contract actions.

FAR already permits the VEPAT's recommendation that VECPs be implemented with a not-to-exceed price when the savings exceed government costs by an amount predetermined by the Program Manager. The intent is to realize significant unit cost reductions as early as possible when contractor development and implementation costs can be capped.

//s//

Eleanor R. Spector  
Director, Defense Procurement



**APPENDIX B:  
EXCERPTS FROM AN ACTUAL VECP  
DEFINITIZATION MODIFICATION**

The following excerpts from an actual VECP definitization modification illustrate how such a modification might be done.

- Page B-2 is the cover sheet.
- Page B-3 summarizes changes and refers to the parts of the modification that revise prices and define future savings.
- Page B-4 summarizes CLIN adjustments.
- Page B-5 shows how some of the CLIN adjustments were actually made.
- Page B-6 contains the VE savings model calculations referenced on page B-2.

Some fields were deleted to maintain anonymity.

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT				1/11
2. AMENDMENT/MODIFICATION NO. <b>P00024</b>		3. EFFECTIVE DATE See BLK 16C	4. REQUISITION/PURCHASE REG. NO. -	5. PROJ NO. (if appl.) <b>02-422-72417</b>
6. ISSUED BY		CODE <b>N00024</b>	7. ADMINISTERED BY (if other than Item 6) CODE <b>S0305A</b>	
8. NAME AND ADDRESS OF CONTRACTOR (No., street, State and ZIP Code)			<input checked="" type="checkbox"/> 9A. AMENDMENT OF SOLICITATION NO.	
			<input type="checkbox"/> 9B. DATED (SEE ITEM 11)	
TIN NO: 95-1778500 DUNS: 79-459-8573			<input checked="" type="checkbox"/> 10A. MODIFICATION OF CONTRACT/ORDER NO.	
			<input type="checkbox"/> 10B. DATED (SEE ITEM 13)	
CODE <b>15090</b>	FACILITY CODE		<b>00 MAY 09</b>	
11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS				
<p>The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers is extended. is not extended</p> <p>Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation as amended, by one of the following methods: (a) by completing Items 8 and 13, and returning copies of the amendment; (b) by acknowledging receipt of this amendment on each copy of the offer submitted; or (c) by separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter; provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.</p>				
12. ACCOUNTING AND APPROPRIATION DATA (If required)				
<b>ATTACHED HERETO</b>				
13. THIS ITEM APPLIES ONLY TO MODIFICATIONS AND CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.				
<input checked="" type="checkbox"/>	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A			
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in service office, accreditation data, etc.) SET FORTH IN ITEM 14 PURSUANT TO THE AUTHORITY OF FAR 43.103:			
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:			
<input checked="" type="checkbox"/>	Mutual agreement of the parties.			
	D. OTHER (Specify type of modification and authority)			
	E. IMPORTANT: Contractor ( ) is not, (X ) is required to sign this document and return 2 copies to the issuing office.			
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)				
See page 2.				
Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.				
15A. NAME AND TITLE OF SIGNER (Type or print)			16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)	
15B. CONTRACTING OFFICER			15C. DATE SIGNED	16B. UNITED STATES OF AMERICA
(Signature of person authorized to sign)				BY
				(Signature of Contracting Officer)
				16C. DATE SIGNED <b>05 DEC 01</b>
NSN 7540-01-132-8070 PREVIOUS EDITION UNUSABLE			STANDARD FORM 30 (REV 10-83) Prescribed by GSA FAR (48 CFR) 53.243	

The purpose of this modification to contract is to incorporate FY00 and FY01 savings and nonrecurring investment costs for Value Engineering Change Proposals (VECPs) SSS4007 and SSS4008. This modification results in a decrease to the funded contract value of \$3,006,413. Accordingly, said contract is modified as follows:

FOR VECPs SSS4007 AND SSS4008:

The parties agree that this supplemental Agreement establishes an amount of \$20,541,798 as the total acquisition savings for VECPs SSS4007 and SSS4008 under the FY00 and FY01 portions of this contract. Per modification P00015, the Government recouped \$2,572,800 of implementation costs; thus this modification recognizes \$17,968,998 of savings and implementation costs. In addition, the parties agree that all nonrecurring implementation costs of VECPs SSS4007 and SSS4008 are being paid by this modification. The savings for VECPs SSS4007 and SSS4008 will be shared between the Contractor and the Government in accordance with the VECP 4007/4008 Saving Model Negotiated Position of 12 October 2001, attached hereto. The Contractor's FY00/01 share of the savings and the nonrecurring implementation costs in the amount of \$14,962,585 are recouped from the available savings.

CLIN	QTY	Previous Unit Price	Previous Extended Price	Revised Unit Price	Revised Extended Price	Net Reduction
0001	75	\$492,129	\$36,909,675	\$414,234	\$31,067,550	\$5,842,125
0017AB	4	\$515,527	\$2,062,108	\$437,632	\$1,750,528	\$311,580
0019AC	6	\$468,828	\$2,812,968	\$390,933	\$2,345,598	\$467,370
0021AB	14	\$515,527	\$7,217,378	\$437,632	\$6,126,848	\$1,090,530
0023AB	12	\$504,669	\$6,056,028	\$426,774	\$5,121,288	\$934,740
0023AC	13	\$504,669	\$6,560,697	\$426,774	\$5,548,062	\$1,012,635
FY00 Total						\$9,658,980
0025	75	\$599,225	\$44,941,875	\$519,598	\$38,969,850	\$5,972,025
0036AA	8	\$535,405	\$4,283,240	\$495,778	\$3,966,224	\$317,016
0036AB	8	\$535,405	\$4,283,240	\$495,778	\$3,966,224	\$317,016
0038AA	1	\$136,619	\$136,619	\$96,992	\$96,992	\$39,627
0038AK	1	\$136,619	\$136,619	\$96,992	\$96,992	\$39,627
0038AN	6	\$146,944	\$881,664	\$107,317	\$643,902	\$237,762
0038AR	3	\$146,944	\$440,832	\$107,317	\$321,951	\$118,881
0046	32	\$572,650	\$18,324,800	\$533,023	\$17,056,736	\$1,268,064
FY01 Total						\$8,310,018
FY00/01 Savings						\$17,968,998
P00015 Savings						\$2,572,800
Total Savings						\$20,541,798

1. Under SECTION B - SUPPLIES OR SERVICES AND PRICES/COST, make the following changes:

a. CLIN 0001 is revised to lower the Unit Price from \$492,129 to \$414,234 and the Total Price from \$36,909,675 to \$31,067,550 as follows:

<u>CLIN</u>	<u>SUPPLIES OR SERVICES</u>	<u>QTY/ UNIT</u>	(FIXED PRICE) <u>UNIT PRICE</u>	<u>TOTAL PRICE</u>
0001	Manufacture Guidance, Control and Airframe (G,C&A) and assemble, test and deliver	75 EA	\$414,234	\$31,067,550

b. SLIN 0017AA is restated to lower the quantity from 14 to 10 and to create SLIN 0017AB. SLIN 0017AB is established at the reduced unit price to reflect incorporation of ECPs 4007/4008 as follows:

<u>CLIN</u>	<u>SUPPLIES OR SERVICES</u>	<u>QTY/ UNIT</u>	(FIXED PRICE) <u>UNIT PRICE</u>	<u>TOTAL PRICE</u>
0017AA	Manufacture G,C&A and assemble, test and deliver.	10 EA	\$515,527	\$5,155,270
	GY-P-AKO NSN TBD FMS FUNDS (See NOTES D and P)			
0017AB	Manufacture G,C&A and assemble, test and deliver :	4 EA	\$437,632	\$1,750,528
	GY-P-AKO NSN TBD FMS FUNDS (See NOTES D and P)			

VECP 4007/4008  
Savings Model

Negotiated Position 12 October 2001

12-Oct-01

	FY00	FY01	FY02	FY03	FY04/05	TOTAL
As-Is BL Cost	124	134	141	285	272	958
	94,853	98,173	101,609	105,165	108,846	
To-Bs VE Cost	16,958	16,958	16,958	16,958	16,958	
Unit Cost Savings	77,895	81,215	84,651	88,207	91,888	
As-Is Lot Cost	11,761,772	13,155,190	14,328,856	29,972,087	29,603,112	98,822,016
To-Bs Lot Cost	2,102,792	2,272,372	2,391,078	4,833,030	4,812,578	16,211,848
REC Savings/Lot	9,658,980	10,882,818	11,935,778	25,139,057	24,790,534	82,810,168
To-Bs NIR Dev/Imp	2,411,105					2,411,105
Net NIR Dev/Imp	(2,411,105)					(2,411,105)
Instant Contract Savings	7,247,875	10,882,818	11,935,778	25,139,057	24,893,536	80,199,063
Government Investment Costs		(3,000,000)				(3,000,000)
Net Acquisition Savings	7,247,875	7,882,818	11,935,778	25,139,057	24,893,536	77,199,063
KTR Incentives						
Acquisition	7,247,875	5,303,605	6,457,266	11,594,073	12,496,768	43,099,577
Total KTR Incentive	7,247,875	5,303,605	6,457,266	11,594,073	12,496,768	43,099,577
Net Govt Savings	2,579,213	5,478,522	5,478,522	13,544,984	12,496,768	34,099,495
TY\$ Inflation Table	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
ACQ Incent (TY\$)	7,247,875	5,303,603	6,457,266	11,594,073	12,496,768	43,099,577
Net Govt Savings (TY\$)		2,579,213	5,478,522	13,544,984	12,496,768	34,099,495

Share

Savings	\$ 7,247,875	\$ 5,303,605	\$ 6,457,266	\$ 11,594,073	\$ 12,496,768	\$ 43,099,577
Percentage	100.00%	67.28%	54.10%	46.12%	50.00%	55.83%
f Savings	\$ -	\$ 2,579,213	\$ 5,478,522	\$ 13,544,984	\$ 12,496,768	\$ 34,099,497
Percentage	0.00%	32.72%	45.80%	53.88%	50.00%	44.17%
Total Savings	\$ 7,247,875	\$ 7,882,818	\$ 11,935,778	\$ 25,139,057	\$ 24,993,536	\$ 77,199,063
						100.00%

## **ABBREVIATIONS**

CADIC	Contractor's Allowable Development and Implementation
CLIN	Contract Line Item Number
CoP	Community of Practice
D&I	Development and Implementation
DFARS	Defense Federal Acquisition Regulation Supplement
DoD	Department of Defense
FAR	Federal Acquisition Regulation
IDA	Institute for Defense Analyses
IR	Infrared
K	Thousand
M	Million
MOU	Memorandum of Understanding
NRE	Nonrecurring Expenses
NTE	Not-to-Exceed
UCA	Undefinitized Contract Action
UCO	Unpriced Change Order
VE	Value Engineering
VECP	Value Engineering Change Proposal



# REPORT DOCUMENTATION PAGE

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