



Performing an Earned Value Management System (EVMS) Self Validation

How to, and the benefits of, a self validation review

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Introduction

Determining whether your contract requires earned value is more than a yes or no question. Everything from the type of reports required to who needs to validate the system is subject to the criteria determined by the contracting agency. Each agency has their own set of criteria, but all follow similar guidelines as the Department of Homeland Security (DHS) discussed below. The main difference you'll find are around the dollar thresholds that trigger different levels of rigor in a contractor's earned value system. At all levels of contracts where earned value is required a contractor's Earned Value Management System (EVMS) must be verified as compliant with the ANSI-748 criteria. This is because the goal of the government is have contractors do more than just say they have earned value, but actually *use* earned value to manage their program, and the only way to ensure that is to validate that it is being used by an outside party. What differs based on the contract size is who has to do that validation. In many cases the system can be self validated, which sounds easy but care needs to be taken that you execute your self validation correctly or you run the risk of opening your organization up to even more unwanted scrutiny if it's determined that the validation was done incorrectly.

Requirements

The Department of Homeland Security, like other agencies, requires validated compliant Earned Value Management Systems (EVMS) for all contracts \$5million or greater. DHS has contracted out with Defense Contract Management Agency (DCMA) to be its

Cognizant Federal Agency (CFA) with regards to validated EVMS systems.

All contracts greater than \$50 million are required to go through an extensive DCMA Validation Audit, however, contracts that fall within the \$5-\$50 million range are required to have only a documented self validation of their EVMS. In addition to the level of validation, there are other key attributes about a contractor's EV requirements determined by the dollar thresholds of the contract including reporting requirements, contractual language and requirement for an Integrated Baseline Review (IBR). If your contract falls within the range that allows for a documented self validation you will want to follow the process outlined below to ensure you meet the intent of the validation.

The following table, on the next page, depicts the dollar value and contractual requirements that the DHS places on their projects:

Contract Level	Contract	ANSI Standard-748 Compliance	Other Criteria	Contract Wording
≥\$50M	Yes	* Full * Government-verified EVMS	* IBR within 90 days of award * CPR 1, 3, 5 and IMS submitted monthly * Government <u>must</u> verify the EVMS * If EVMS is determined to be non-compliant, contractor fixes EVMS at their expense but Government pays for increased operational costs associated with maintaining a compliant system	* Primary wording
≥\$20M, <\$50M	Yes	* Full * Self-verified EVMS	<ul style="list-style-type: none"> • Same as above except Contractor <u>must</u> verify the EVMS • If self-verification is determined to be defective, Contractor shall correct at their expense 	* Alternative I
≥\$5M, <\$20M	Yes	* Mandatory subset of ten guidelines * Self-verified EVMS	* Contractor must comply with guidelines 1, 2, 3, 6, 7, 8, 16, 22, 27, 28 * If self-verification is determined to be defective, Contractor shall correct at their expense	* Alternative II
<\$5M	Discretionary	* Discretionary; up to subset of ten if used	* Contractor must comply with up to 10 of the following guidelines 1, 2, 3, 6, 7, 8, 16, 22, 27, 28 * If self-verification is determined to be defective, Contractor shall correct at their expense	* Alternative III

Execution of a Self Validation

What Will be Required in Order to perform the Validation:

- **Earned Value System Description** – Documented processes and procedures to describe how the organization meets the intent of the ANSI Standard 32 guidelines.
- **Program executing Earned Value System** – A program that has incorporated and is executing the organization’s Earned Value System
- **Data Traces** – The review team will perform data traces through a series of documents to ensure the integrity of the data and to help identify that the processes and procedures documented in the company’s EV system description. The following are documents that will be required for the data trace:
 - Contract Documentation (Modifications)
 - Work Authorization Documents
 - Integrated Master Schedules & lower level schedules
 - Change Control Documents
 - Contract Performance Reports (1-5) deliverables
 - Responsibility Assignment Matrix (RAM)
 - Control Account Plan (CAP) Reports
 - Actual Accrual documentation
 - Material performance documentation

- Estimate At Complete CAP reports or other documentation
- Risk Database
- Control Account Manager Notebooks

- **Identify a Review Team** – The team should be made up of individuals who are independent to the success of the program, whether that is an internal group or a contractor brought in to perform the review. This group should also combine to have an expertise in the following areas:
 - Earned Value Management
 - Scheduling best practices
 - Risk Management
 - Technical expertise

Who is Needed

- **Review Team** – An independent 3rd party who tends to be more objective and have the auditing experience required for the review, should be on the review team or make up the entire review team, however, the review team can be made up of internal personnel. The table below represents the pros and cons of having an internal versus external

Internal	
Pros	Cons
*Minimize cost *Familiarity with Technical aspects of program	*Subjectivity *Resource constraints
External	
Pros	Cons
* Industry Expertise * Best Practices Experience *Audit Experience	*Cost * Availability

- * Objectivity
- * Training

- **Control Account Managers (CAMs)** – Identify control accounts that contain Labor, Material, High risk, Subcontractor oversight for interviews
- **Program Management** – Program manager, Deputy Program manager, Business Manager/EV Lead/Project Controls Lead to be interviewed on EV process and procedure
- **Project Control Analysts** – To drive during interviews and be able to provide samples of data upon request

Perform EVMS Evaluation

The Data Review represents the initial portion of the review process. The entire team will carefully analyze project documents, to try and identify both process and user errors. The purpose of this review is to identify risk areas to the company’s EVMS pertaining to specific documented processes, help the organization clean up their data, and pinpoint areas that the review team should focus on during interviews. The finalized data review will provide the review team with a thorough review of risk areas and help focus resources on addressing the most pressing needs.

The following are examples of data traces and analysis:

Trace contract value from initial contract modification through latest contract modification to change control documents and Contract performance reports

- Trace Control account budget values through change control documents through WADS, CPR’s, CAP’s
- Trace IMS Dates back to WADs, CAPs and contract documentation
- Perform EAC analysis
- Data Integrity checks, negative BCWS, BCWP, ACWP in current period without explanation

The next step is the interview process. The majority of the interview process will be focused on the CAMs. The review team will prepare a list of questions, in advance, that will be uniformed for all the CAM interviews. These questions should focus on covering aspects of all of the 32 ANSI 748 criteria and incorporate any issues that may have been found during the Data Review stage. The purpose of asking uniformed questions from a list is to identify process issues across the program as opposed to lack of experience from a particular CAM. Interviews for program management will vary in the type of questions that are asked but they will serve the same purpose, as it is expected that program management will have a thorough knowledge of the EVMS and programs process and procedures. It is important for the review team to remain on target and get through the question list for each CAM to ensure uniformity in the information that is discussed in the interviews. This portion of the Self Validation plays a huge role in the overall evaluation of the program.

Once the data trace and interview portion is over, the review team will provide an overall general review and identify all corrective actions. The overall review will highlight the biggest risk areas by ANSI standard criteria and needs to give a pass/fail score. Each corrective

action will be broken into process vs. data mistakes, process failures will typically be a category 1 corrective action resulting in a failed guideline while data mistakes will vary.

Benefits of performing a self validation

There are several benefits to performing a self validation beyond meeting the requirements of DHS. It will improve how efficient an organization's EVMS can be by identifying the following:

- Broken processes, processes that are not being followed or executed
- Identifying processes that do not meet the intent of the ANSI or organizations EV goals
- Cleaning up data errors
- Identifying where additional training is required

Identifying the shortfalls in the EVMS process will improve the quality and integrity of the data, resulting in better cost, schedule and risk analysis used while managing the contract. These improved processes can also lead to efficiency in performing typically monthly earned value activities, such as statusing, variance analysis, EAC updates, management analysis, which could all result in both cost and schedule savings.

In preparation for a DCMA Audit

The following section describes the cost in time and expense for a contractor to go through and achieve a DCMA compliance validation. These costs can be significant, especially if requirements are not met on the first go around and multiple audits and corrective actions

become necessary. One step to minimize the risk of not being prepared to meet the ANSI requirements is to conduct an independent self-validation of the EVMS prior to the review. Executing a self validation audit in advance gains experience of going through such an audit, which can be particularly be beneficial for the CAMs who will go through an intense interview process. Having the experience of going through an audit will improve chances of passing the first go around by knowing what to expect!

DCMA Compliance Audit

DCMA timetable, estimated costs, what to expect

Once DCMA gets involved a typical compliance process can take from 12 to 18 months, however if the company does not pass the initial compliance audit, the process could take years. Estimates on costs to a contractor of retaining DCMA for this process is around \$250-\$300K, costs do not include the time and effort required to participate and prepare for the audit. This is something to consider when determining how to prepare for the audit.

There are three key meetings with DCMA over the course of the compliance process:

- **The Initial Visit** – DCMA will travel to the contractor to do a meet and greet and lay the ground work for the following audit. DCMA will present the contractor with their expectations and roles, and a date will be set for the Preliminary Assessment Visit (PAV).
- **Preliminary Assessment Visit (PAV)** – A mini compliance audit, in which DCMA

comes in and performs a review of the company's data and System Description as well as performs interviews of CAMs and Management. The results of the PAV will be corrective actions and an "As Is" assessment of the contractors EVMS. The Contractor will be responsible for developing a plan forward on how to correct the corrective actions and meet the requirements of the guidelines they failed during the PAV.

- **EVMS Compliance Audit** – The official review of the contractors EVMS is very similar to the PAV, however, all CAMs and key management personnel will be interviewed, where as during the PAV, only a portion of the CAMs are interviewed. This review, depending on the significance of the initial findings from the PAV and the contractors' ability to close actions, typically takes place 12 months after the PAV. After completion of this review DCMA will make a decision on meeting the minimum requirements of the ANSI standard. If the contractor meets the requirements they will receive an agreement from DCMA that they have a compliant system that will be monitored by DCMA, if they don't meet the requirements the contractor will once again develop a plan to close the findings and another review will be set up in the future.

result from not passing an audit. The time and cost associated with this process can be very expensive and any steps to mitigate this impact to the program being reviewed should be taken. Performing a self validation to satisfy the requirements of your contract, or in advance of a full DCMA Compliance Audit, will save both time and money, and provide the organization with valuable experience in going through an audit.

Conclusion

The true benefit of performing a EVMS self validation is to save on time and costs that can