

# National Defense Industrial Association (NDIA) Program Management Systems Committee (PMSC) ANSI/EIA 748 Earned Value Management System Acceptance Guide

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# LIST OF ACRONYMS

Advance Agreement
American National Standards Institute
Corrective Action Request
Compliance Evaluation Review
Electronics Industries Alliance
Earned Value Management Implementation Guide
Earned Value Management System
Federal Acquisition Regulation
Government Performance and Results Act
National Defense Industrial Association
Office of Management and Budget
Progress Assessment Review
Program Management Systems Committee
Work Breakdown Structure



# **1 INTRODUCTION**

#### **1.1** System Acceptance Overview

Systems Acceptance is a process that involves the reviewing, approving and certifying of the design and implementation of an Earned Value Management System (EVMS) that meets the requirements of the 32 EVMS Guidelines embodied in the American National Standards Institute/Electronic Industry Alliance's (ANSI/EIA) EIA-748-A, Standard for Earned Value Management Systems.

#### 1.2 Background

The Government Performance and Results Act (GPRA) and the Office of Management and Budget (OMB) Circular A-11, have increased the requirement on government agencies to establish, maintain, and use a certified EVMS on major, capital asset acquisitions. This, in turn, has greatly expanded the number of suppliers who need to design, implement, and have approved EVM systems that provide timely performance information for both the supplier and the customer during these acquisitions. This need has challenged both the government and supplier communities to establish a framework where multiple government agencies can recognize a supplier's certified EVMS without the need for unnecessary supplemental reviews or impediments to contract start-up. There is a pressing need for an approach that assures multiple government and commercial customers as well as the contractor community that they can have high confidence that a supplier's EVMS meets the EIA 748-A, Industry Guidelines for Earned Value Management.

To address this issue, the National Defense Industrial Association (NDIA) Program Management Systems Committee (PMSC), with encouragement from OMB, has developed this standard EVM system acceptance process to provide a means of obtaining EVM system compliance recognition that is acceptable to all stakeholders, both government and commercial customers, and to the suppliers supporting them. The traditional supplier/customer relationship does not have to exist in order to initiate the system acceptance process established in this guide. For example, a government agency may use this process to assess the appropriate use of EVM at the program level within the agency.

#### **1.3 Purpose of the Guide.**

This guide is intended to define a process whereby an EVM System Owner (supplier) or government program with a first-time requirement to comply with the EVMS Guidelines can:

- (a) Understand the needs for and effectively design an EVMS;
- (b) Successfully implement the EVMS on the requiring acquisition;
- (c) Conduct an evaluation of system compliance and its implementation;
- (d) Prepare and provide substantiating documentation for evaluation and implementation;



(e) Receive approval and documentation that will satisfy the current and future requirements for an approved EVMS.

In succeeding sections, appropriate guidance will be provided to assist both the EVM system owner and the customer in fulfilling this responsibility.

## **1.4 Definitions**

ANSI/EIA 748 Accepted EVMS System	An EVM system that has been accepted by an organization, customer or third party representing the customer as compliant with the ANSI/EIA 748 Standard – EVMS, typically documented by an EVMS Advance Agreement (AA) or similar document. Acceptance may be found at a single geographic location or in multiple locations. Multiple accepted systems may also reside within a single geographic location.
ANSI/EIA 748 Compliant EVMS System	An EVM System that has been validated to be compliant with the intent of the ANSI/EIA 748 Standard – EVMS and consistent with the NDIA EVMS Intent Guide. Typically, ANSI/EIA 748 compliance is determined by an independent qualified review team.
Compliance Evaluation Review (CER)	The process to assess and determine EVM System Owner compliance with the ANSI/EIA 748 Standard – EVMS.
Compliance	The characteristic of an EVMS that ensures the intent of the 32 EVMS Guidelines is embodied in the integrated processes and sub-processes of a contractor's methods of operation that generates accurate and useful program performance data.
Customer	The government or commercial organization or entity for which one or more programs are being executed.
EVM Executive Agent	An organization or party responsible to verify and accept an EVM System Owner compliance with ANSI/EIA 748 Standard – Earned Value Management Systems. Examples include a Government Agency EVM Focal Point (responsible to accept contractor and Government organization EVM Systems), and contractor (responsible to accept subcontractors' EVM System.
Earned Value Management System (EVMS)	The integrated set of policies, processes, procedures, systems, and practices that meet the intent of the guidelines in American National Standard ANSI/EIA-748, Earned Value Management Systems.



EVMS Guidelines	The 32 EVMS guidelines contained in American National Standards Institute/Electronics Industries Alliance (ANSI/EIA) 748 - Current Version, Earned Value Management Systems.
EVM System Owner	The organization or party responsible for the implementation and use of an Earned Value Management System compliant with the ANSI/EIA 748 – EVMS Guidelines. Examples of EVM System Owners include contractors, subcontractors, Government program offices, and Government functions.
Program or Project	A planned effort to achieve an outcome, the progress toward which is discretely measurable.
Self-assessment	The process of a contractor's or government agency program's internal review of the design and implementation of an EVMS with the intent to verify compliance with the 32 Guidelines.
Supplier/ Vendor	A government or commercial organization or entity from which goods or services are required to complete a program or project.

The NDIA PMSC will review and assess the need for revisions to this guide every two years.



# 2 THE SYSTEM ACCEPTANCE PROCESS

The steps involved in the process of getting from system design to system acceptance are shown in Figure 2.1 and described in this chapter in general terms. Subsequent chapters describe each of these steps in sufficient detail to allow execution by the EVM system owner. It should also be noted that these steps may overlap to the extent that resources and capability exist within the EVM System Owner, the customer, or both. All steps except those in the Acceptance column are necessary for an EVM System Owner or government agency program to implement an EVMS that meets the intent of the guidelines. The decision to seek system acceptance is based on internal management desires, contractual requirements, or both.



#### NDIA PMSC System Acceptance Process Overview

Figure 2.1. The System Acceptance Process involves the System Owner, the Compliance Evaluation Team, and Executive Agent.

The amount of time to execute each step is a function of several factors:

- EVM System Owner resource availability and capability;
- Size of the acquisition driving the need for certification;
- Maturity level of the organization implementing EVM;
- Commitment of the organization and senior management;
- Availability of independent parties (customer, consultants, in-house, etc.).



# 2.1 System Design and Implementation.

Since ownership of the EVMS rests with the EVM System Owner (or a Government agency program when an EVM System Owner/customer relationship does not exist), the responsibility for completing this phase will also rest with the EVM System Owner. Normally, the customer or EVM Executive Agent requiring compliance does not participate in the implementation phase in order to provide independence during the Compliance Evaluation Review.

During this phase, the EVM System Owner must establish an EVM Policy that is endorsed and supported by management. This policy will describe in high level terms how EVM will be applied in the system owner organization. EVM policies usually include a reference to ANSI/EIA 748 compliance, the type of programs/projects required to use EVM, and the EVM Executive Agent responsible for EVM compliance and surveillance. Establishment of the EVM Policy is then followed by the development and implementation of an EVM System. This system is generally documented by a system description and procedures that translate the EVM Policy into specific organizational approaches of how the 32 guidelines in ANSI/EIA 748 will be executed. During this phase, the EVM System Owner will typically:

- Compare existing project management processes and procedures to the ANSI/EIA 748 Guidelines.
- Identify areas where modification of current procedures or creation of new ones is required. This is sometimes referred to as a "gap analysis."
- Select candidate projects, programs, or contracts for initial implementation and demonstration of the EVMS via Compliance Evaluation Review (CER).
- Establish a plan and schedule with assigned resources to ensure proper and effective design, documentation, implementation, and maintenance.
- Train the program / project team on EVM and the organization EVM system description, procedures and systems.

The period of performance for these activities typically ranges from 6 to 18 months.

## 2.1.1 Additional Documents

In addition to the developing an EVM Policy and System Description and Procedures, two other documents are also developed that address post acceptance responsibilities: an EVMS Surveillance Plan and an EVM System Revision Procedure.

Since the EVM System Owner is responsible for the maintenance of the system, the Surveillance Plan is developed to describe how the organization will periodically monitor the compliance of its EVMS to ANSI/EIA-748 Standard. Guidance on developing and implementing the EVMS Surveillance Plan is provided in the NDIA Surveillance Guide.

Because modifications to the EVMS may be required from time to time, a System Revision Procedure is developed to document a formal approach to changing the EVMS. The DOD's Earned Value Management Implementation Guide (EVMIG), while not



directly applicable for many EVM System Owner organizations, does provide example guidance for such a document.

# 2.1.2 Compliance with ANSI Guidelines

There are various approaches to documenting the processes involved in the structure of an EVMS. Many organizations choose to write a single document that describes how their program management processes and procedures meet the intent of the guidelines. Others choose to write a series of procedural documents that address specific elements of the guidelines; e.g. a work breakdown structure (WBS) procedure to cover the intent of the first Organization guideline or a procedure for establishing program or project schedules as covered by the first two Planning, Scheduling, and Budgeting guidelines. Another approach is to integrate EVMS processes and procedures into existing functional procedures, such as engineering, production, and program management. Whichever approach is chosen, it is vital that, when completed, the EVM System Owner assures itself that all 32 guidelines are addressed and that the aspects of the various processes are fully integrated in an approach to project management.

There are also two philosophies regarding how to describe compliance of the internal processes with the guidelines. The first involves taking each of the five sections of the guidelines (Organization; Planning, Scheduling and Budgeting; etc.) and discussing how the internal processes support the intent of each of the guidelines in that section. This means that for each guideline, the EVM System Owner must ensure that each of the internal processes that support or intersect with that guideline must be covered in the discussion. For example, the material control process and the subcontract management process cut across all five sections of the guidelines. As the guidelines in the Organization section are described in terms of internal processes, these areas must be covered as to how their unique aspects relate to the intent of the guideline under discussion.

The second approach orients the discussion around the multiple processes involved in project management and how each of these processes meets the intent of each guideline that is affected. For example, in describing how the management of material items, from identification of requirements to inclusion in the end-product, is conducted in a project management environment, the description of this process must address guidelines in all five sections. Other project management processes likewise intersect guidelines in all sections.

In either case, the EVM System Owner should make use of a matrix similar to Figure 2.2 to ensure that each of the 32 guidelines, their management intent, and related identifiable products are covered. This matrix becomes very useful during the self assessment and progress assessment reviews and subsequent documentation of the evaluation processes. It verifies to both internal management and external customers or reviewers that the EVM System Owner has done a comprehensive job of describing an EVMS that meets the intent of the guidelines.

The NDIA Earned Value Management Systems Intent Guide is an excellent document that will assist the EVM System Owner in ensuring a complete description of the EVMS is prepared.





Figure 2.2. An Example Guideline Matrix to Ensure all 32 Guidelines are addressed in the EVM System.

## 2.2 Compliance Evaluation Review

Once the processes and procedures have been created, modified, and published, the Compliance Evaluation Review (CER) is conducted to verify:

- The system, as described, meets the intent of the 32 Guidelines as described by the NDIA Earned Value Management Systems (EVMS) Intent Guide;
- The system, as described, is fully implemented on the selected programs;
- The implementation is successful and complies with the requirements of the system description/organization's EVMS procedures and (if appropriate) program unique procedures;
- The system implemented provides timely, accurate, and auditable management information for both the organization's project management and the customer.

The compliance review process and results are documented to allow those who did not participate in the review the ability to evaluate the propriety of the review and its results.

This independent review must be conducted by a person(s) or organization(s) that:



- Has no vested interest in the EVM system owner; system; or program, project or contract being reviewed;
- Is recognized as being knowledgeable and competent in the area of EVM systems and implementation;
- Uses the NDIA EVMS Intent Guide for evaluating EVM systems for compliance.

A CER report will be prepared by the Compliance Evaluation Team. This report is an iterative document resulting from a process that allows the Compliance Evaluation Team to consider the EVM System Owner's responses to any of the team's findings prior to submitting the CER report to the EVM Executive Agent.

## 2.3 System Acceptance

The final phase of the overall process is the acceptance of the EVM System Owner's system by Government or commercial customers that may or may not have current or pending acquisitions with the EVM System Owner to whom the certification is to be issued. For Government customers, this acceptance, as defined by the OMB Federal Acquisition Regulation (FAR) clause, is effected by the contracting officer for the customer. For commercial customers, a designated representative will provide the appropriate acceptance document. If an AA is subsequently issued, it is normally signed by senior representatives of the EVM System Owner and the customer.

In the case where the customer is a Government agency, it is possible that the EVM System Owner will want the acceptance to also be acknowledged by other agencies. The responsibility for coordinating cross-agency acceptance of the system rests primarily with the agency issuing the initial acceptance. Cross-agency acceptance is best accomplished through the establishment of reciprocal agreements between agencies and organizations to mutually recognize EVM System Owner systems as ANSI EVM compliant. Each participant in the reciprocal agreement would specify the level of supporting documentation or additional reviews required from the certification process to meet their requirements for acceptance.

Commercial customers, at the request of the EVM System Owner, may provide documentation supporting the system acceptance to new customers of the EVM System Owner. For a new commercial customer, the EVM System Owner, upon receiving a new requirement for the implementation of an EVMS, may submit copies of the letter of acceptance, the compliance assessment results, and/or the report of the compliance acceptance for the new customer.



# **3** SYSTEM DESIGN AND IMPLEMENTATION

The primary purpose of Earned Value Management is to support program management with a system that provides a sound basis for program/project performance, problem identification, corrective actions, and management decisions. Thus, Earned Value Management isn't simply a metric or a report. It is comprised of a number of management processes that form an integrated program/project management capability. EVM Systems must, first and foremost, meet an organization's needs and good business practices to be effective. Therefore, the establishment of an EVMS requires a structured process.

There is no single correct process for establishing an EVMS, but it typically involves the following efforts:

- An organizational commitment to the use of EVM;
- An assessment of where changes/enhancements to processes to meet the EVMS Guidelines described by ANSI/EIA 748 are needed;
- Design of the EVMS processes;
- Documentation of the EVMS;
- Training;
- System evaluation.

This section addresses these topics.

#### **3.1 Policy Preparation and Approval**

The EVM System belongs to and is governed by the EVMS owner corporation, company, Government Agency, or similar organization. Establishment of an EVM policy by senior management is not required, but is an invaluable first step. It will facilitate the commitment of resources necessary to design, implement, and maintain an EVMS with the requirements of ANSI/EIA-748 EVMS guidelines. At a minimum, the policy should include:

- A statement of commitment to the operation and maintenance of the EVMS;
- A reference to policies and standards, i.e., ANSI/EIA748 and OMB A-11;
- A definition of the type of programs and projects that will use EVM;
- Assignment of responsibility for the operation and maintenance of the EVMS;
- A definition of program management responsibilities for implementing and using EVM;
- Assignment of support organization responsibilities;
- Establishment of the requirement to conduct internal surveillance on the EVMS.



# 3.2 System Documentation and Procedures

The ANSI/EIA 748 EVMS guidelines are high level, goal oriented, and are intended to state the qualities and operational considerations of an integrated management system using earned value analysis methods without mandating detail system characteristics. They also are structured to enable implementation on large and small programs, projects, or contracts. EVMS owners have the flexibility to implement EVM in a manner that provides the effective and efficient performance management methods and techniques within the ANSI/EIA 748 Guidelines.

An EVM System Owner may choose to either:

- a) Write a single document that describes how their program management processes and procedures meet the intent of the guidelines.
- b) Write a series of procedural documents that address specific elements of the guidelines; e.g. a work breakdown structure (WBS) procedure to cover the intent of the first Organization guideline or a procedure for establishing program or project schedules as covered by the first two Planning, Scheduling and Budgeting guidelines.
- c) Revise existing functional procedures to incorporate processes and procedures to meet the intent of the guidelines.

Whichever approach is chosen, it is vital that, when completed, the EVM system owner is assured that all 32 guidelines are addressed and that the EVMS system owner's various processes are reflected in an integrated project management system.

Developing these documents will only take place after specific system design solutions have been identified to address any "gaps" that may exist between the EVMS owner's current practices and the requirements of the EVMS Guidelines. One way that these gaps might be identified is by conducting an assessment of current processes and practices as related to each of the 32 EVMS Guidelines.

The NDIA Earned Value Management Systems Intent Guide may be used to assist the EVMS owner in ensuring an ANSI/EIA 748 conforming design of the EVMS is developed and documented. An organization that needs to satisfy a proposal requirement that its system meets this standard may prepare a compliance map documenting how its business processes conform to ANSI/EIA 748 EVMS guidelines using the NDIA Intent Guide Appendix A, Process Description Compliance Map Template.

Preparing an Intent Guide compliance map provides several benefits that keep the system design and implementation process moving forward. As described above, it can help in identifying any process or procedure gaps that will require closure to achieve conformance with the EVMS Guidelines. The aligning of EVM System Owner (company or Agency) processes and procedures with the applicable guideline may also identify duplicate documentation that, when removed, typically provides process streamlining. When the design and subsequent documentation efforts that result from actions taken based on the compliance mapping are completed, those involved with implementing and maintaining the EVMS typically have a better understanding because



the EVMS reflects how the organization intends to do business. This, in turn, can reduce the training requirements.

# **3.3** Implementation and Review

Early in the system design and documentation activity, senior management needs to select a program or project for the EVM System implementation. This program or project will be the vehicle used for the conduct of the Compliance Evaluation Review. Some considerations for selecting the program or project for EVM System implementation and review include:

- A program or project with a contractual or Government requirement to use an ANSI/EIA 748 compliance EVM System;
- The diversity of the business-base upon which EVM will be implemented:
  - development, modernization, enhancement effort
  - hardware production projects
  - software design and delivery
  - support and services
  - multiple performing organizations (contractors, subcontractors, and Government organizations);
- The number of locations under which the EVMS will operate.

Implementation of the EVMS on the program/project or projects occurs after the system design and documentation discussed in paragraph 3.2 above has been completed. Additionally, as the processes are implemented, feedback on the effectiveness and accuracy of the system documentation and procedures is important to ensure that needed improvements are incorporated in a timely manner. Figure 3.2 graphically displays this process.



Figure 3.1. Documentation and Implementation Feedback Process

When the EVMS design is a product of using "as is" or modifying existing business processes and procedures, implementation can move forward efficiently because the



processes are largely consistent with those already in use on programs or projects. Where the EVMS is the result of defining and documenting new processes and procedures, the implementation activity may require that more training be conducted. Implementation may also identify where modifications to the new processes and procedures may be required because issues weren't recognized until the design concepts were actually implemented.

Once the implementation is completed, the system evaluation process begins. The EVMS system owner may elect to conduct or have conducted a simulation of the EVM System Evaluation Review to assure itself that the EVMS as implemented does conform with the EVMS Guidelines, allowing any shortfalls in the design and/or implementation to be addressed prior to the conduct of the actual Compliance Evaluation Review. Alternatively, they may move directly to the EVM System Evaluation Review as described in Section 4.0 of this document.

# 3.4 EVM and System Training

In conjunction with the activities of design and implementation, training in both the concepts of earned value management and the system compliance with the ANSI/EIA 748 EVMS guidelines is critical to achieving system acceptance. EVM basic training focuses on the concepts of the EVMS as embodied by the 32 guidelines and the associated processes.

In addition to the EVM basic training, specific EVMS training must be structured around the process elements of the system designed and being implemented by the EVM System Owner. This would include unique project management aspects of the system, forms that have been or are being designed for implementation, and process-oriented interfaces with other internal systems that support project management.

Training should begin as early in the system implementation as possible. As system documentation is updated to reflect the feedback from implementation, the system training should also be modified to reflect the documentation updates.



# 4 EVM SYSTEM COMPLIANCE EVALUATION REVIEW

The purpose of the EVM System CER is to:

- Ensure senior management active participation and ownership of the earned value management process;
- Verify the EVM system (processes, procedures, systems, and practices) are compliant with the ANSI/EIA 748 standard;
- Demonstrate the use of the EVMS by the EVM System Owner's project management workforce;
- Ensure the data and reports produced by the EVM system are reliable and capable of being used for planning, risk mitigation, and corrective actions, and for forecasting schedule and cost outcomes;
- Verify the EVM system produces performance data consistent with the program technical, schedule, and cost status.

The EVM System CER may occur prior to program approval or contract award or may occur after these events as depicted in Figure 4.1.

Acquisition Life Cycle	EVM Executive Agent / Customer	EVM Systems Owner / Supplier
Pre-Systems Acquisition Approval or Award	Recognize: – Application Guide – System Acceptance Guide	Document and Assessment: - Application Guide - Intent Guide
Systems Acquisition Approval or	Accept: – Intent Guide	Implement: – Intent Guide
Award	- IBR Guide	- IBR Guide
	Surveillance: - Surveillance Guide	Execution and Surveillance:
		- Surveillance Guide

#### Figure 4.1. EVMS Compliance Framework

There are various options for who conducts the EVM System CER, such as:

- The EVM Executive Agent;
- The customer;



- The EVM System Owner using in-house resources;<sup>1</sup>
- The EVM System Owner using a combination of in-house, customer, EVM Executive Agent, and 3<sup>rd</sup> Party Certifier resources;
- An independent, non-advocate 3<sup>rd</sup> party.

The EVM System Owner may choose to conduct a Self-Assessment (SA) and Progress Assessment Reviews (PARs) to prepare for the EVM System Compliance Evaluation Review. These optional reviews (described below) provide an opportunity for the EVM System Owner to assess its readiness for the CER and to increase the probability of success.

# 4.1 EVM System Compliance Evaluation Review Schedule

It is important to establish a schedule of activities required to get from system design to completion of the CER. The CER may be conducted serially, concurrently, or in combination with system design to reduce the cost of obtaining ANSI/EIA 748 acceptance. The review schedule for the CER needs to provide adequate time for an efficient review and assessment. While the CER review and assessment phases are not strictly defined, a notional high level process is illustrated in Figure 2.1, and is conducted by the Compliance Evaluation Team in accordance with that Figure.

While sufficient time to conduct each of the required activities should be included in the schedule, every effort should be made to complete the process quickly. When incorporating, as appropriate, the activities described in the schedule below, activities may be scheduled with some overlap depending on the maturity of the organization. Coordination of the schedule with all participants will assist in "buy-in" by the Compliance Evaluation Team, the EVM System Owner, and the EVM Executive Agent. Figure 4.2 is a nominal schedule for completing the CER. The overall timeline will change based on the EVM System Owner's choices and situation.



Figure 4.2. Sample CER Schedule

<sup>&</sup>lt;sup>1</sup> For EVM System Owners who choose to conduct the EVM System Compliance Evaluation Review themselves or through a 3<sup>rd</sup> party, it may be appropriate to invite participation from the EVM Executive Agent or customer.



Some EVM System Owners may choose readiness reviews or assessments prior to scheduling the CER. Reviews such as an EVM Self-Assessment Review or an EVM Progress Assessment Review may be conducted at the request of the EVM System Owner or the EVM Executive Agent. These reviews normally are conducted after the EVM system has been implemented as depicted in Figure 4.3



Figure 4.3. Review Cycles

# 4.2 EVM System Owner Self-Assessment

The purpose of the Self Assessment (SA) is to:

- Assess the compliance to the ANSI/EIA 748 Standard and identify areas of noncompliance and areas to improve, often referred to as a "Gap Analysis." The SA may include Control Account Manager interviews (sometimes referred to as mock CAM interviews) to assess progress of the EVM system implementation.
- Develop a plan to prepare the program/contract team to conduct a CER.
- Develop a plan and schedule for future reviews, including proposed dates for the CER.

The SA is optional and the decision to conduct an SA is based on factors such as:

- Maturity of the EVMS processes;
- Project personnel's understanding of EVM concepts;
- Status of EVM training for the project team;
- Size of the project (dollars, time, and/or complexity of scope).

After the EVMS Owner determines the program/project has implemented corrective actions to comply with the ANSI/EIA 748 Standard, the next step is to conduct a Progress Assessment Review (PAR) as described in the next section or proceed to coordinate with the CER Team Lead to schedule the CER.

#### 4.3 **Progress Assessment Review**

The PAR is optional and the need for a PAR may be determined by either the EVM System Owner or the EVM Executive Agent. The PAR is conducted by the Compliance Evaluation Team in preparation for the EVM System CER. The purpose of the PAR is to



review progress toward implementing the EVMS, to resolve misunderstandings, and to assess the project's readiness to demonstrate a fully-integrated, earned value management system. The PAR assists in preparing for the CER by familiarizing key team members with the fundamentals of the EVMS. Usually the PAR is conducted by a small team to provide the EVMS Owner with a readiness assessment. The PAR may include control Control Account Manager interviews (sometimes referred to as mock CAM interviews) to assess the EVMS implementation. The PAR team does not institute changes to the EVMS but provides sufficient information for the EVM System Owner to understand non-compliance issues and to implement corrective actions necessary to meet the intent of the ANSI/EIA 748 Standard. Although the PAR is optional, the PAR provides an additional opportunity for the EVM System Owner to correct potential non-compliance issues prior to conducting the CER.

## 4.4 Compliance Evaluation Team Membership Selection and Training

Once the EVM System Owner decides which option to use for conducting the review and, therefore, how the team will be structured; one of the initial steps is selecting individuals to make up the CER team. The CER team qualifications should be consistent with those listed in Appendix A. The CER team selection documentation should include the checklist provided with the CER Team qualification guide (Statement of Qualifications for Review Lead of EVM Compliance Evaluation Reviews) with a copy of the team member resumes. The CER team lead assigns Compliance Evaluation Review responsibilities to the CER team members. Usually, CER team assignments are based on the five categories defined in the ANSI/EIA 748 Standard: Organizing, Planning, Accounting, Analysis & Reporting, and Change Management.

CER team members should be independent and non-advocates of the EVM System Owner and should not have participated in the design and implementation of the system. CER team members must certify their independence and non-advocacy as follows:

- Team members will certify that they have not participated in the EVMS design or implementation.
- Team members will certify that they will not enter into a business relationship with the company whose system is being evaluated that benefits the person or company that participated in the CER for 18 months except to conduct further attestation services, such as additional CERs, EVM surveillance, and general training.
- Team members will sign non-disclosure agreements to protect proprietary data provided to the review team during the CER.
- Where contractor CERs are conducted, team members will sign an agreement precluding teaming and providing EVM implementation consulting services to a company competitor on a competitive bid for 18 months or until such time as the contract is awarded, the company withdraws from competition, or the customer cancels the immediate project, whichever event comes later.



Once the compliance evaluation team has been established, training is conducted. Since team members must meet stringent qualifications, their training requirements will vary depending on their experience with conducting CERs. A training program would include the process of evaluating EVMS compliance with the guidelines and the effectiveness of its implementation. This includes the approach to conducting the review (process or guideline oriented), the manager interview concept, documentation requirements, and the forms and formats to be used during the course of the review. The assessment formats provided in NDIA PMSC ANSI/EIA 748 Intent Guide, Appendix A, are required. At the conclusion of the team training, the team members should be able to:

- Verify that the system description words reflect the intent of the EVM Guidelines;
- Ensure that the system, as described, is implemented on the selected project(s);
- Prepare objective documentation of the results of the CER.

Team members should conduct CERs and PARs in a professional manner. Appendix C, PAR and CER Execution Considerations, is provided to encourage a well conducted review resulting in a final report that is acknowledged to be valid by all the participants in the review.

## 4.5 EVM System Compliance Evaluation Review (CER)

The purpose of the EVMS CER is to determine if the implementation of a documented EVMS is compliant with the ANSI/EIA 748 Standard. An overview of the CER process is illustrated in Figure 4.4.



Figure 4.4. Overview of the CER Process



The CER team will review the EVMS Owner's working papers and documents to ascertain compliance and document its findings. The EVMS Owner will make the documents used in the implementation of the EVMS available to the team. The NDIA PMSC ANSI/EIA 748 Intent Guide, Appendix A, provides examples of documentation that should be reviewed. The team should verify that the documentation is current and accurate. The EVM System Owner will demonstrate to the team how the EVMS is structured and used in actual operation.

The following are activities that will be performed to the extent necessary during the CER:

- (1) An overview briefing by the EVMS Owner to familiarize the CER team with the proposed EVMS, identifying any changes that have occurred since the most recent PAR(s) that may have been conducted.
- (2) A review, on a sample basis, of the documentation that establishes and records changes to the baseline plan for the contract. This will include work authorizations, schedules, budgets, resource plans, and change records (including management reserve and undistributed budget records). The purpose is to verify that the EVMS Owner has established and is maintaining a valid, comprehensive, integrated baseline plan for the contract.
- (3) A review, on a sample basis, of the reported cost and schedule performance against the baseline plan, along with documented analyses of problems and a projection of future costs. Also, a trace of the summarization of cost/schedule performance data from the lowest level of formal reporting (normally the control account level) to the level designated for internal management and (if applicable) the external performance measurement reports. The purpose of this activity is to verify the adequacy of the control aspects of the systems and accuracy of the resulting management information.
- (4) Interviews with a selected sample of members of the project organization, including control account managers, as well as functional representatives or other work teams, and project managers. The purpose of these interviews is to verify that the EVMS is fully implemented and is being used to manage the project. The sample data reviewed should be sufficient to verify implementation and compliance with the EVMS. While it may not be necessary to review 100% of all documentation and program personnel, too small a sample may not provide sufficient visibility into possible system problems. Samples should be selected to focus on the areas of greatest risk. If significant problems are found, the sample size, and, if necessary, the duration of the review, should be extended.
- (5) Findings that require corrective action will be documented as Corrective Action Requests (CAR). Corrective actions required before ANSI/EIA 748 compliance acceptance can be issued should be identified. The CER review team may recommend optional process improvement opportunities.
- (6) An exit briefing covering the team's findings. During this briefing, any open system discrepancies should be discussed along with the EVM System Owner's



corrective action plan which should establish responsibility and a timeframe for all required corrective actions.

## 4.6 **Compliance Evaluation Review Report**

At the conclusion of the CER, the team prepares a report documenting the activities of the review, as well as the results. The content of the report will reflect, as completely as possible, how the team verified compliance with the guidelines and that the described system was properly and effectively implemented on the project or projects under review. Appendix B contains an example format for the CER report.



# 5 SYSTEM COMPLIANCE ACCEPTANCE

EVMS System Compliance acceptance represents the formal recognition by an EVM Executive Agent that an EVM System Owner's EVMS is compliant with the ASI/EIA 748 Standard. It means that the EVM Executive Agent has reviewed the EVM system owner's EVMS system CER report and determined that:

- The EVM system complies with the 32 guidelines of ANSI/EIA-748-A and the NDIA EVM Intent Guide;
- The EVM System Owner is using its EVMS;
- The customer's review complied with the steps in this Systems Acceptance Guide.

The information provided in the CER Report, regardless of the report's author, should be evaluated by the customer for completeness. The EVM system owner should provide documentation of the current status of corrective actions before a final decision is made concerning issuance of a system certification of acceptance

# 5.1 Initial System Compliance Certification

EVMS ANSI/EIA 748 Compliance may be a partial acceptance. Examples include production certification and development certification. The EVMS System Compliance Certification should clearly indicate that all ANSI/EIA 748 Guidelines are included in the EVMS or clearly specify which Guidelines are not included in the Compliance.

The EVMS Compliance Certification document can take several forms. The style and content of the document is up to the EVM Executive Agent, but it should contain the following minimum information:

- a) Title;
- b) The EVM System Owner's name and the location(s) for which the certification is applicable;
- c) The title given to the EVMS by the EVM System Owner (PMCS, IMS, P23RD2005, etc.) and the date approved;
- d) The title(s) of the project(s) or contract(s) on which the review was conducted;
- e) The name and contact information for the person signing the document;
- f) A statement of period for which the Compliance Certification will be effective;
- g) Reference to the ANSI/EIA 748 Guidelines included in the Certification.
- h) For those EVMS acceptances that have certified a portion of the ANSI/EIA 748 Guideline, it is recommended that "Partial EVMS Compliance Certification" be included.

The signed EVMS Compliance Certification document is then forwarded to the EVM System Owner and all other parties involved in the process.



In cases where the certifying party is a government organization, the compliance acceptance for a contractor or Government organization is usually issued by an Agency EVM official, i.e., EVM Focal Point, EVM Executive Agent, or a contracting officer. If a Government Advance Agreement (normally executed between a government entity and the EVM system owner) is desired in addition to the EVMS System Certification, the Advance Agreement is signed by representatives of both the EVM system owner and the government agency. In cases where the certifying party is a contractor, compliance acceptance is usually issued by a contractor official, i.e., contracting officer or an EVM Focal Point.

# 5.2 EVM System Owner Responsibilities

The issuance of the EVMS Compliance Certification to the EVM System Owner represents the completion of the EVM System Owner's activities for the initial system acceptance process. The certification does not necessarily represent a contract certification and the EVM System Owner is required to maintain the system, implement EVM on additional programs or projects, and conduct EVM surveillance. If the EVM System Owner revises the EVM policy, process, procedures, or practices, the EVM Executive Agent issuing System Compliance Certification should approve the revisions.

EVM System Owners should maintain documentation of all reviews, acceptance notification, advance agreements, system description, and other EVMS products to ensure that they can adequately demonstrate compliance with the standard.

For additional contracts with EVM requirements, the EVM system owner will be tasked to furnish, generally with its proposal, the following documentation:

- EVMS System Compliance Certification and Advance Agreement, if any;
- Compliance Evaluation Report (CER);
- System description, policies, and procedures;
- Recent EVM Surveillance reports demonstrating the EVM system remains in compliance with the ANSI/EIA 748 Standard.
- EVMS surveillance conducted by the EVM System Owner and the EVM Executive Agent will be consistent with the NDIA EVMS Surveillance Guide.

#### 5.3 EVM Executive Agent Responsibilities

After acceptance and certification of an EVM System Owner compliance with ANSI/EIA 748, the EVM Executive Agent is responsible for conducting EVM surveillance to verify the EVM system is being maintained and used by the EVM System Owner. Revisions to ANSI/EIA 748 Compliant EVM System policies, processes, procedures, or practices must be approved by the EVM Executive Agent.

When an EVM System Owner with an ANSI/EIA 748 compliant EVMS receives future contracts with EVMS requirements, the customer should receive EVM documentation from the EVM System Owner (see section 5.2). The customer is not required to accept an EVMS Compliance Certification issued by another customer. However, the new customer should review the EVM System Compliance Certification, the CER EVMS



Report, recent EVM surveillance reports, and other materials provided by the EVM system owner, assess them, and then determine whether the EVM System Owner has demonstrated, to the satisfaction of the customer, that its EVM system meets the ANSI/EIA-748-A Standard. The customer will then (a) request additional information and documentation, (b) issue an EVMS System Compliance Acceptance, or (c) conduct its own compliance review. In most cases, it will not be necessary to duplicate the CER review process in order to satisfy the contractual EVMS need.



APPENDIX A CERTIFICATION TEAM QUALIFICATION GUIDELINES

	The review lead is responsible for the overall directio the applicable EVM standard, i.e., ANSI/EIA 748 Star	n of the EVM Compliance Evaluation Review (CER) eff ndard - EVMS.	ort, ensuring that the review is in compliance with
Duties and Responsibilities	The review lead will select review team members an Reviews (CER). The Review Lead is responsible to Example Team Member skills and knowledge requirt - Accounting - Schedule Management - Cost estimating and budgeting - Program management with familiarity with the typ The review lead provides overall review direction anc that all review efforts are accomplished in a professic team's progress.	d verify compliance with the Statement of Qualifications form a team that has a cross section of skills and know ed to conduct a comprehensice include: e of program being assessed and structure of the WBS d interpretation of the EVM standard to the review team. onal manner by the entire team. The review lead shoul	s for Team Members of EVM Compliance Evaluation vledge to address the intent of the EVM Standard. S used for similar programs . The review team has the responsibility to insure Id keep the requesting authority informed of the
Review Lead	Mandatory	Desired	Optional
Education/Training	<ul> <li>Knowledge and understanding of the applicable EVM Standard, i.e., ANSI/EIA 748 Standard - EVMS</li> <li>A formal course of instruction on ANSI/EIA 748 Standarc Guidelines</li> <li>Knowledge of assessment techniques for examining, questioning, evaluating, and reporting</li> <li>Undergraduate degree or minimum of ten years of eamed value management experience</li> <li>Formal course of instruction (minimum of 4- hours) in the EVM standard being applied</li> </ul>	- PMI College of Performance Management, Professional Educational Program (either Course Certificate or Graduate Certificate)	Not Applicable
Experience	-Minimum of ten (10) years of EVM experience -Minimum of 5 years EVM implementation experience -Team member of three or more EVM validation reviews	Not Applicable	Not Applicable
Certification	Not Applicable		- Earned Value Professional certification (Association for Advancement of Cost Engineering)
Ethical Conduct	For other than self-evaluations conducted with in-house re - The team member shall not be currently employed or har preceding 18 month. - The team member will certify to preclude employment or - The team member will certify to have not provided consul- - The team member will certify to have not significant fin- consult - Them team member will certify to have not significant fin- directors, or employment of an immediate family member	ssources: we been employed by the company or government agency un provide services to the compnay or government agency und agement or employment) with another company competitive ulting or training services for EVM implementation or validation ancial interest in the company undergoing EVM validation, de by the company.	ndergoing EVM validation during any portion of the lergoing EVM validation ofr a period of 18 months activity for a period of 18 months on purposes durint he previous 24 months sfined as ownership of stocks, membership on the board of
This statement statement does independent certifyir	of qualifications was prepared by Project Managemen not imply endorsement by Project Management Institu ig companies or government agencies. As such, Proj or any legal action resulting from the	it Institute - College of Performance Management, and ute or any of its components. This is intended to serve ject Management Institute and its components are not I application of this voluntary standard from any affected.	is intended to serve as a guide only. This as a standard for voluntary compliance by iable for any misapplication, misinterpretation, d parties.



STATEMENT OF QUALIFICATIONS FOR REVIEW LEAD OF EVM COMPLIANCE EVALUATION REVIEWS

January 23, 2007 DRAFT

Bach team member has the responsibility to perform detailed evaluations within their assigned areas, and are under the management control of the team chied. The informed of the status of their area, and asset with Goodimentation and perfaustion of the transmission. Each team members, based on their experience, may be asked to group leader, planning and directing the activities of their group.       Note: team membership will be limited to one (1) on-the-job trainees or first time team members, in order to avoid deterioration of the team's effectiveness.       Note: team membership will be limited to one (1) on-the-job trainees or first time team members, in order to avoid deterioration of the team's effectiveness.       Note: team membership will be limited to one (1) on-the-job trainees or first time team members, in order to avoid deterioration of the team's effectiveness.       Note: team membership will be limited to one (1) on-the-job trainees or first time team members, in order to avoid deterioration of the team's effectiveness.       Note: team membership will be limited to one (1) on-the-job trainees or first time team members, in order to avoid deterioration of the team's effectiveness.       Note: team membership will be limited to one (1) on-the-job trainees or first time team members, in order to avoid deterioration of the team's effectiveness.       Note: team membership will be limited to one (1) on-the-job trainees or first time team members, in order to avoid deterioration of the team's effectiveness.       Note: team membership will be limited to one (1) on-the-job trainees and understanding of the spokeable EVM standard.       Note: team membership will be limited to one (1) on-the-job trainees and understanding of the spokeable EVM standard.       Noromedio o
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STATEMENT OF QUALIFICATIONS FOR TEAM MEMBER OF EVM COMPLIANCE EVALUATION REVIEWS



# APPENDIX B EXAMPLE CER REPORT



#### **Executive summary:**

A brief summary of the review results and an overview of the CER process.

#### Introduction:

A brief summary of the EVM system owner implementation of EVM. Topics include the following:

- EVM policies
- Program(s) using EVM
- Customer EVM requirements
- CER methodology
- CER team.

## **Purpose:**

A description of the purpose of the review and the purpose of the report.

## **Team formulation:**

A summary of how the CER team was formed and why it is qualified to conduct the CER. Team resumes should be included in this section.

## **Findings:**

This includes the key CER team findings of compliance, strengths, and improvement opportunities. This section should address (a) how the system description satisfies the intent of the guidelines; (b) the implementation of the system on the project(s), and (c) how the team verified the accuracy of the implementation on the project(s).

Findings include actions that are required prior to obtaining certification of ANSI/EIA 748 compliance. The CAR reports and disposition should be included in the CER report. The findings section should include a list of open CARs and improvement opportunities (IO).

#### **Conclusions:**

The CER team overall assessment and recommendation of ANSI/EIA 748 compliance. This section also includes open actions.

## Exhibits and appendixes:

Documentation and examples used in support of both the findings and the conclusions.



APPENDIX C PAR AND CER EXECUTION CONSIDERATIONS



#### **OVERVIEW**

PAR and CER reviews are structured to facilitate the exchange of information about the EVM system ANSI/EIA 748 Standard compliance expectations and the EVM System Owner implementation. These reviews are structured to identify compliance or non-compliance with the ANSI/EIA 748 Standard guidelines. Open and honest communication is facilitated by:

- Code of conduct demonstrating respect for the EVM System Owner team
- Out briefing and discussion of potential findings before a report is generated.

## CODE OF CONDUCT CONSIDERATIONS

The following suggestions are provided to encourage the PAR/CER team to conduct a respectful review:

- The program in-briefing or orientation is used to introduce the team members and gain an understanding of review expectations, agenda, schedule, and process;
- The review team lead provides advanced notification of the review agenda and request for documentation;
- Documentation reviews are conducted prior to arriving at the EVM System Owner facility in an effort to minimize the amount of time spent at the facility;
- The PAR/CER process and expectations are described, and the EVM System Owner has an opportunity to comprehend and respond;
- The review is conducted in a professional manner in a spirit of constructive assessment and discovery;
- If there are proprietary data issues of limited disclosure, the team may request assistance of outside independent auditors to verify indirect, accounting, and material systems.

The EVM System Owner can contribute to a well conducted review. Suggestions for the EVM Systems Owner include:

- Coordinate with the PAR/CER review team leader to ensure that program personnel required for the review are available;
- Ensure documentation and policies are available to the review team sufficiently in advance of the review to allow for meaningful analysis;
- Respond to Corrective Action Requests as quickly as possible;
- Provide explanations and illustrations in the context of demonstrating compliance with the ANSI/EIA 748 Standard;
- Provide information that is used by the EVM System Owner in the normal course of business and avoid providing exhibits created solely for the purpose of the PAR/CER review.



## OUT BRIEFING AND DISCUSSION CONSIDERATIONS

During the PAR/CER review, issues, concerns, and findings will be discovered by the review team. During the period of review and leading to the final report and out briefing, clear communications and avoidance of miscommunication can contribute to a well conducted review. Suggestions for maintaining good communications and a meaningful out-briefing include the following:

- EVM System Owner personnel should seek clarification to fully understand questions and data requests;
- In order to avoid to avoid conflicting assessments, the PAR/CER team leader is solely responsible for the final disposition of findings and concerns;
- PAR/CER team should discuss issues and concerns prior to documenting a finding.