



Achieving Sufficient ANSI/EIA-748 (EVMS) Standard Compliance

A White Paper

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*Increased EVMS
compliance
requirement...*

Introduction

Due to the Government Performance and Results Act (GPRA) and the Office of Management and Budget (OMB) having increased the requirement on government agencies to establish and maintain the use of Earned Value Management Systems (EVMS) on acquisitions, a rapidly increasing number of supplier companies (prime-/sub-contractor) are required to have a compliant, EVMS implemented. The standard against which compliance is measured is the *American National Standards Institute /Electronics Industries Alliance (ANSI/EIA) 748 Standard* (hereinafter also referred to as '*The Standard*').

One major benefit of an EVMS, if implemented and managed correctly, is its ability to provide performance information to both the prime-/sub-contractor and the customer (typically prime-contractor or government/DoD agencies - within the context of this white paper), so as to enable early corrective actions to be taken on a project, if and when necessary.

White Paper focus -
Small Business...

This white paper is primarily focused on assisting small businesses (primes and subs) in achieving sufficient ANSI/EIA-748 standard compliance. In addition, the purpose of this paper is to highlight the fact that a company can steadily implement a cost-effective EVMS through an incremental approach over time - limited only by the level of compliance required and the time in which to reach compliance.

Earned Value Management System or Systems?

What is an Earned Value Management System and why are the Federal government (civilian and defense) agencies placing ever-increasing importance on EVMS?

...singular or plural?

According to the **ANSI/EIA-748** standard:-

"Earned Value Management System (EVMS) for program management will effectively integrate the work scope of a program with the schedule and cost elements for optimum program planning and control. The primary purpose of the system is to support program management. The system is owned by the organization and is governed by the organization's policies and procedures."

According to the FAR, an Earned Value Management System refers to:

"a project management tool that effectively integrates the project scope of work with cost, schedule and performance elements for optimum project planning and control."

The FAR continues ...

" The qualities and operating characteristics of an earned value management system are described in American National Standards Institute /Electronics Industries Alliance (ANSI/EIA) Standard-748, Earned Value Management Systems."

The FAR and OMB's Circular A-11 refers to the EVMS as "a project management tool", which - to those that are less familiar with EVMS - may imply that all EVM facets are (or maybe should be) contained within one

tool/system. However, this is not typically the case – i.e. an EVMS is normally a composite of separate policies, processes and the related information technology systems to enable the EVMS to function more effectively. Examples of discrete IT systems used to facilitate the EVMS include: requirements management, cost management, schedule management, resource time management, change management, risk management, etc. The policies, processes and IT systems are integrated (electronically and/or manually) with each other to produce a composite EVM ‘system’.

Various degrees of
sufficient
compliance exist...

Sufficiently Compliant EVMS

Throughout the remainder of this paper, the term ‘*Compliant EVMS*’ refers to an Earned Value Management Systems that meets the minimum (some or all) ANSI/EIA-748 standard criteria, where the number of criteria to be met depends on the FAR and specific government/DoD agency requirements, and the contract value. For example, the Defense Federal Acquisition Regulations (DFAR) and certain Federal agencies (e.g. HHS, DOE, etc.) contain EVMS clauses/provisions which differ from the Federal Acquisition Regulations (FAR). Key differences include order/award value breakpoints (e.g. \$10M, \$20M, \$25M, \$50M, etc.) requiring different degrees of ANSI/EIA-748 compliance.

Therefore, an EVMS can be sufficiently compliant if implemented and managed correctly, while enabling a small business to make the minimum cost and time commitments required to comply with the relevant criteria of *The Standard* and to enable the company’s EVMS to incrementally comply with additional criteria as contracts of increasing value with various agencies and/or primes develop.

The Standard

What does the ANSI/EIA-748 standard look like from thirty thousand feet?

As per this paper’s introduction, the GPRA and the OMB (as per Circular A-11) require agencies to use an EVMS that is compliant with a standard developed by the American National Standards Institute /Electronics Industries Alliance, i.e. ANSI/EIA-748. This original standard, revision A, was developed in June 1998 and was subsequently updated in June 2007 as ANSI/EIA-748-B.

The Standard consists of 32 criteria/guidelines that a company needs to follow on order to implement a robust EVMS and to ensure that the

resulting data are reliable, thereby facilitating well-informed decisions regarding corrective actions - that may need to be taken in order to keep the project on time, within budget and scope and to expected quality standards. Refer section: [Sufficiently Compliant EVMS](#) regarding the number of criteria that need to be met.

As stated in the actual ANSI/EIA-748-B standard document:

...without mandating detailed system characteristics...

“The guidelines in this document are purposely high level and goal oriented as they are intended to state the qualities and operational considerations of an integrated management system using earned value analysis methods without mandating detailed system characteristics. Different organizations must have the flexibility to establish and apply a management system that suits their management style and business environment. The system must, first and foremost, meet the organization’s needs and good business practices.”

...The system must, first and foremost, meet the organization’s needs and good business practices...

The following text, extracted from the above quote, is of critical importance:

1. **“...without mandating detailed system characteristics.”** - indicates that the standard does not mandate how the EVMS is architected, designed and/or interfaced/integrated with its various facets, but rather what value it should add to a company’s project management environment.
2. **“The system must, first and foremost, meet the organization’s needs and good business practices.”** - indicates that the EVMS must, at worst, not negatively impact the company’s ability to perform its normal business and, at best, enhance a company’s project performance by means of earned value performance data.

EVMS Challenges Facing Businesses

Although this white paper is primarily focused on assisting small businesses regarding sufficient EVMS standard compliance, certain challenges face businesses of all sizes. The extent to which these challenges apply depends on the maturity of current earned value management practices that a company may already have adopted.

...companies, like people, resist change to varying degrees...

Large and Small

Some challenges across businesses of all sizes include (but are not limited to):

1. **Resistance to process change**

All companies, like people, resist change to varying degrees. However, the potential resistance to change in a company is compounded by a number of 'resistance factors'. Although the volume (noise) of these factors is typically higher in larger companies, the percentage mix is similar across all company sizes.

The most common of these factors include (but are not limited to):

- a. **Communication** – How well have the benefits of the potential process changes been communicated to the relevant decision maker(s) and those that will be directly impacted by the changes?
- b. **Organizational structure** – Is the structure excessively stacked versus flat (or relatively flat)?
- c. **Leadership** – Is a specific manager or executive prepared to take ownership as EVMS "Champion", or is no one person prepared to drive it?
- d. **Office politics** – i.e. Fear of losing control – e.g. "This is the way it has always been done, and will continue to be done, because if the company takes the new approach there will be no need for this department!" – **or** – "That's the way it will continue to be done - because I say so!"
- e. **Job security** – e.g. "I'm not going to be helpful in implementing the change because 'Joe' does not want it – and he is my boss!"
- f. **Ignorance** – e.g. "We didn't know that there was a better way!"
- g. **Baseless 3rd Party Information** – e.g. "I heard from my neighbor that Company ABC tried that approach and it did not work for them – so why should it work for us?"

2. Incremental EVMS implementation approach

A key challenge, once the decision to comply with *The Standard* has been made, is with regard to which approach to take. There are, effectively, two approaches: (a) 'Big-Bang' or (b) Incremental. For more information, refer section: ['Big-Bang' versus Incremental](#).

3. Build/Integrate versus Buy

Deciding on whether to integrate/incorporate relevant EVMS policies, processes and currently deployed IT systems - namely cost,

...beware of 'one-
software-vendor'
solutions...

schedule, accounting, resource time management, etc. - or to buy a 'one-software-vendor' EVMS solution can be challenging.

This challenge applies to all companies, irrespective of size. However, the difference is the scale of integration needed and/or software licensing costs. For more information regarding the potential downside of going with the 'one-software-vendor' option, refer section: [Integrate/Build or Buy](#) in this paper.

When considering the viability/feasibility of integrating existing systems while implementing an EVMS using an incremental approach, identify a balance between which processes need to be automated and which can be performed manually (along with good quality documentation). For more information on manual versus integrated processes, refer section: [Integrated/Automated versus Manual Processes](#) in this paper.

Small Business

Some specific challenges facing small businesses, related to these standards (but are not limited to), are:

1. **Lack of EVMS skills** – small businesses (depending on how small) don't have a Project Management Office (PMO). Therefore, the skills required to implement an EVMS typically don't exist. It is worth noting that many large companies with PMOs, to their detriment, do not practice EVMS – either ineffectively (at best), or at all!
2. **Financial Impact** - Costs associated with potentially upgrading/replacing existing processes/systems, including: requirements, change, schedule, cost and resource time management, etc. can excessive if an incremental approach is not followed.

*...lack of skills and/or
funding...*

Integrated/Automated versus Manual Processes

Although it may not be the most efficient solution, in addition to potentially increasing risk due to 'double-entry' inaccuracies, there is no reason why certain EVMS processes can't be performed manually in the event that systems integration is not currently viable, i.e. due to time and/or cost constraints or incompatible technologies, etc.

*...balance
integrated/automated
and manual processes
if budget is a major
constraint...*

Small businesses are more likely to take the 'manual process' option more often due to the fact that business contract volumes (not value) may be lower than larger companies but the integration costs as a percentage of income are likely to be higher.

When deciding whether to perform a specific EVMS process manually versus incurring the cost of integrating the systems required to automate the process, a balance needs to be reached between which processes need to be automated (based on volumes) and which can be performed manually. Note, however, that all manual processes must be shown to be well documented, and any information produced from these processes for use by the prime/sub company and the customer must be produced quickly and relatively easily on demand. Some key factors need to be considered during when identification a manual process – this list represents only a few factors:

1. **Technical skills required:** Can the process be performed by a number of individuals, or is it so technical that only one person is capable of performing it?
2. **Documentation:** Who is responsible for documenting the process and maintaining the documentation in the case of process changes?
3. **Repeatability:** Is the identified manual process repeatable with an acceptable degree of accuracy (quality)?

Incremental versus 'Big-Bang' Approach

*...avoid 'Big-Bang' if
at all possible!...*

As it is often the case that a small business will initially be awarded a contract or sub-contract at the lower end of the value breakpoints, as specified by the Defense Federal Acquisition Regulations (DFAR), etc. (refer section: [Sufficiently Compliant EVMS](#)), it is most likely that the prime-/sub-contractor will not be required to satisfy all of the standard's criteria – e.g. possibly only 10 core criteria versus all 32. For this reason (amongst others) an incremental approach to ANSI/EIA-748 standard compliance is the most time and cost-effective and lowest risk approach, as opposed to a 'Big-Bang' approach. With the Incremental approach, EVMS implementation can continue to be performed as and when the relevant additional standard criteria need to be met – so as to remain compliant with *The Standard*. The 'Big-Bang' approach requires that all new (or enhanced) processes/systems are implemented at once. The 'Big-Bang' significantly increases risk of negative impact to the business due to a multitude of new and likely

unfamiliar processes under-performing or failing. The ‘Big-Bang’ approach, therefore, requires significantly more testing than the incremental approach due to the scale/scope of potential failures.

ANSI/EIA-748 Standard Compliance Review

Standard
Compliance
Review...the
cornerstone...

Medium to large prime or sub-contracting companies, which typically have well-staffed Project Management Offices (PMOs), may (many don’t) have the in-house skills required to perform an EVMS Compliance Review, or to be able to perform a Gap analysis of existing project management processes and to implement the needed policies, processes and IT systems for an EVMS, or to make enhancements to meet specific ANSI/EIA 748 EVMS criteria.

In the case of small businesses, very few have the needed EVMS-specific project management analysis and implementation resources/skills. However, the ANSI/EIA-748 Standard Compliance Review is the cornerstone from which a compliant EVMS is built/assembled.

For this review process to be successful, the ‘reviewer’ - typically an FTE (if skills allow) or external consultant – should ideally develop a short (typically one week) schedule/plan, from discussions with the requesting company, to indicate what activities need to be performed and which company SMEs will need to be interviewed/involved.

During the Execution phase of the review process, the *reviewer* interviews the SMEs to determine the ‘AS-IS’ (current) state of the project management policies, processes (automated and manual) and IT systems - and the extent to which all processes are documented. The *reviewer* then produces a draft *EVMS Compliance Plan* as per the specific criteria contained within the ANSI/EIA-748 standard and based on anticipated contract values (refer section: [Sufficiently Compliant EVMS](#)).

...delivers the final
*EVMS Compliance
Plan* and *Preliminary
SDD* documents to
the company’s
EVMS “Champion” ...

The *reviewer* should, in addition, produce a draft preliminary EVM Systems Description Document (*Preliminary SDD*), containing the identified ANSI/EIA-748 criteria that are required to be met and the current AS-IS systems/processes – resulting in an EVMS Gap analysis for internal use. Following the Gap analysis, the *Preliminary SDD* should also contain preliminary information regarding ‘TO-BE’ (enhanced) systems/processes that need to be implemented so as to reduce identified gaps in order to comply with *The Standard*.

The *reviewer* must review the draft EVMS Compliance Plan and draft Preliminary SDD documents with key company executives, senior managers and SMEs and will perform final modifications where necessary.

The reviewer then delivers the final *EVMS Compliance Plan* and *Preliminary SDD* documents to the company's EVMS "Champion".

Integrate/Build or Buy

...take care not to place all EVMS 'eggs' in a one-vendor-specific basket if at all possible...

Following successful completion of the ANSI/EIA-748 Standard Compliance Review, including the deliverables – i.e. *Compliance Plan* and *Preliminary SDD* documents - more detailed analysis of deficiencies exposed during the Gap analysis is required to determine exactly how the company will need to proceed to 'fill' the gaps.

Although some software manufacturers market ANSI/EIA-748 complaint 'single vendor solution' EVM systems, caution should be exercised when considering the acquisition of these types of systems. The reason for this is that, although good integration typically reduces double data entry, thereby increasing information accuracy and faster data updating, etc. – which are all potentially good features - they should not come at the cost of proprietary interfaces, or an EVMS solution that attempts to be "a jack of all trades but a master of none" regarding the many key facets of project management. Utmost care should be taken not to place all EVMS 'eggs' in a one-vendor-specific basket but to integrate best-in-class and cost-effective systems using open integration standards where possible. This results in overall best EVMS practices within the available budget and increment cycle.

Reduce Risk by Eliminating Procrastination

To guarantee EVMS ANSI/EIA-748 compliance failure – simply procrastinate!...

As stated previously, companies, like humans, often resist change - where the only difference between large and small companies is the resistance volume (noise). Therefore, subsequent to the [ANSI/EIA 748 Compliance Review](#) process, companies may slip into a state of procrastination as the expected contract, requiring standard compliance, is considered to 'only be needed in the future' – even if the 'future' is only six months away! Therefore, it is not unusual if a company's strategy is to "implement a *Compliant EVMS* (or perform upgrades) if and when the contract is awarded". **Be aware - This strategy is fraught with risk, typically resulting from the implementation of new, or significantly changed, project management processes at exactly the time that the company can least afford it – i.e. when it should be focusing its efforts on delivering on the**

*Some companies
need to make a
executive decision
– others don't
have a choice...*

awarded contract - not on how the complaint processes should work and why it may not be working as expected!

Consequently, before beginning the [ANSI/EIA 748 Compliance Review](#), the company needs to make an executive decision on whether or not it will pursue prime-/sub-contracts that require use of a *Compliant EVMS*. Many companies no longer have a choice – they either have to comply or they will be out of business. Once this decision is made, the issue of procrastination should be eliminated in that the company would regard ANSI/EIA-748 compliance as a necessity for the development of additional business opportunities.

Irrespective of exactly when the first contract is awarded, the EVMS must be implemented and tested well in advance to enable all of those individuals involved to become familiar with the processes and to address issues, etc.

Training to key!

Training

Staff training on the advantages and use of an EVMS is critical!

*...robust,
incremental,
sufficiently
compliant...*

Benefits

The benefits of having access to the necessary EVMS skills and following a robust, incremental EVMS that is sufficiently compliant are:

1. The creation of an EVMS project, consisting of initiating, planning, executing and closing phases (including monitoring and controlling) of each incremental cycle that is required to meet potentially increasing ANSI/EIA-748 standards criteria.
2. Reduction of risk due to well-planned EVMS increments.
3. The most effective funds using of existing IT systems through the implementation of integrated/automated processes and timely, repeatable and well-documented manual processes. **Note: All processes (automated and manual) need to be well documented!** The difference is that automated process documentation is typically more technical in nature, whereas manual processes need to be easily read and understood.
4. The implementation of EVMS best practices – within cost, time and technology constraints.

5. The flexibility, by means of the incremental approach, to update/enhance processes to comply with potentially changing standards criteria.
6. The ability to train company staff on the advantages and use of new (or enhanced) EVMS processes in an incremental manner, as and when standards compliance is increased.

PMP certified staff!

The RobustPM Advantage

RobustPM (Robust Web Services, Inc. dba) has provided high quality project management consulting services since incorporation in 2002.

The RobustPM value proposition is:

“To identify IT project, program and portfolio management process vulnerabilities and the elimination or mitigation thereof through the integration of clearly-defined, practically-implemented and optimized project management processes, via appropriate tools and techniques, for the delivery of successful project services or products on time, within budget and of high quality.”

RobustPM provides the following unique advantages with regard to EVMS (but not limited to):

1. The performance, within a typical project life cycle, of an [ANSI/EIA-748 Standard Compliance Review](#), including the delivery of *EVMS Compliance Plan* and *Preliminary EVM Systems Description Document (SDD)* documents.
2. The identification and documentation of integrated/automated and manual EVMS processes based on the ANSI/EIA-748 Standard Compliance Review and Gap analysis.
3. Facilitating the implementation of a [Sufficiently Compliant EVMS](#) by means of an incremental (reduced risk) approach and through the utilization of currently deployed IT systems for the most cost-effective and productive EVMS possible, within budget and time constraints.

4. Ongoing incremental Compliance Reviews, documentation and facilitating the implementation of additional standard criteria as and when required.
5. Providing EVMS training to company staff on the advantages and use of new (or enhanced) processes during each increment and upon request.

Additional services...

Note that in addition to the above EVMS consulting services, other quality project management services are provided by PMP certified RobustPM staff.

First step...

To begin the first step towards achieving sufficient EVMS ANSI/EIA-748 Standard Compliance, contact George Loudon at 1.610.457.4189 or george.loudon@robustpm.com.