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National Defense Industrial Association
Integrated Program Management Division

Contracting with Earned Value Management (EVM) Requirements

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1 Introduction

This guide is intended to enhance the alignment between contract management and integrated program management practitioners, from pre-award through closeout of a contract that includes requirements for an Earned Value Management System (EVMS) or performance management requirements using Earned Value Management (EVM) best practices. The guidance within is intended for Government and Industry practitioners, centered around best practices and Government regulations associated with program/project and contracts management; and aligns with the Electronic Industries Alliance Standard for Earned Value Management Systems (EIA-748) (current version) and the American National Standards Institute (ANSI) approved National Contract Management Association's (NCMA) Contract Management Standard (CMS™), Third Edition.

1.1 Purpose

The intended audience of this guide is Buyers and Sellers, especially those in the government contracting sector, in the following roles: contracts/procurement; program/project management including those that are technical specialists; finance/program control; and agency/company oversight. The Buyer is the contracted party with the requirement for goods and/or services to be fulfilled by one or more sellers. The Seller is the contracted party tasked with fulfilling the Buyer's requirement for goods and/or services.[i] These parties would typically be identified as the government in the role of the Buyer and a prime contractor in the role of the Seller. A contractor may serve in both a Buyer and Seller role for lower tier subcontracts.

This guide highlights and explains the unique requirements associated with contracts, where the EIA-748 guidelines or EVM procedures/best practices are applicable and may be imposed as a contract requirement.

Throughout this guide there is an emphasis on the following:

- Program/Project Management and EVM best practices, including the EIA-748 guidelines, as well as associated expectations and regulations for a company's Earned Value Management System (EVMS)
- The contractual execution and compliance related to the CMS™ Contract Life Cycle Phases: 2.0 Pre-Award, 3.0 Contract Award, and 4.0 Post Award

This guide assumes the reader is familiar with basic contracting, program management, and/or earned value practices. This guide was designed to assist contracts awarded under the Federal Acquisition Regulation (FAR) and other supplemental or independent regulations, such as the Defense Federal Acquisition Regulation Supplement (DFARS).

1.2 Background

The core concepts of EVM were documented and instituted in the 1960s. The Department of Defense (DoD) first codified EVMS requirements into policy in 1967, and the Office of Management and Budget (OMB) Circular A-11 Supplement to Part 7, the Capital Programming Guide Supplement requires agencies to use a EVMS based on the EIA-748 guidelines in 1998. Following, the HR2142 - GPRA Modernization Act of 2010 was passed to reform program performance for greater service delivery and program effectiveness.

Among the measures recommended by OMB Circular A-11 to meet the Congressional mandate was the requirement that large or complex acquisition programs be subject to certain risk reducing management measures including (among others) EVMS. OMB Circular A-11 encourages greater accountability throughout the Federal Government such as collaboration between the OMB and government agencies "*to improve the performance and management of the government, including: ... outcome-oriented goals*."

1.3 Document Organization

This guide is structured to provide practical process knowledge needed to direct and work on contracts with EVM requirements. In addition, it is structured to align with project management activities and the major CMS™ phases: pre-award; award and post award.

The first three sections on fundamentals are there to assist users with practical/practitioner knowledge in contracts, program/project management, and EVM. The Roles and Responsibilities section provides Buyer and Seller roles that link to the pre-award, award, and post award sections. The Pre-Award and Award and Post Award sections include processes, guidance, and best practices from solicitation to closeout of the contract.

- Contract Fundamentals: Provides context and terms for understanding contract implications and concepts
- Program/Project Management Fundamentals: Provides information on program management best practices in relation to the EIA-748 guidelines
- Earned Value Management Fundamentals: Provides relevant EVM concepts and terms
- Roles and Responsibilities: Includes the roles and responsibilities for Buyer and Seller, with relevant roles by Responsible, Accountable, Consulted, and Informed (RACI)
- Pre-Award and Award – Project Start-up: Includes pre-award and project start-up/preparation activities in relation to the CMS™ Contract Life Cycle Phases
- Post Award – Execution and Closeout: Includes execution and closeout activities (post-award) in relation to the phases of the CMS™ Contract Life Cycle Phases

For information on relevant terms and definitions used throughout this guide, refer to the NDIA IPMD Master Definitions List for IPMD Guides[ii] (current version).

This guide is organized to follow the contract life cycle - comprised of the major CMS™ phases: pre-award; award and post award. Each of the contract phases is covered in a general manner by one or more sections of the Federal Acquisition Regulation (FAR) and possibly supplements to the FAR issued by governmental agencies.

- *Pre-award* activities are characterized by the Buyer assisting the customer in defining the requirement and developing a comprehensive plan for fulfilling the requirement in a timely manner at a fair and reasonable price. This is accomplished by developing and executing an overall strategy for the purchase, which is accomplished through researching the marketplace, developing contracting strategies, preparing solicitations, and requesting offers.
  - For the Seller, activities include developing and executing a strategy for obtaining the award for a contract, including pre-sales activities, market strategies, and responding to the solicitation.
- *Award* activities involves all the work performed by both the Buyer and Seller that produces an awarded contract.
  - For the Buyer, award activities include evaluating offers, conducting negotiations (as applicable), selecting the source, awarding the contract(s), debriefing offerors, and addressing mistakes in offers and Seller challenges to the selection process.

  - For the Seller, activities include clarifying offers, participating in negotiations, and preparing final offers.
- *Post-Award* activities include the contract management functions known as “contract administration” and “contract closeout.” The contract administration functions will vary greatly depending on the complexity of the contract. Both the Buyer and Seller are actively involved in contract administration to ensure satisfactory performance and to bring the contract to a successful conclusion.
  - For the Buyer, activities include addressing any issues arising during contract performance that might increase performance risk, executing contract modifications, monitoring compliance of contract terms, making payment(s), and closing out the contract.
  - For the Seller, activities include contract performance, invoicing, engaging in subcontracting activities, managing contract changes, and bringing the contract to a successful conclusion.

This guide expands on the generalized processes described in the FAR to offer insights that are applicable to those activities when the contract requires the Seller to use the EVMS to manage the contract effort. Where applicable the guide shares best practices concerning project and contract management with respect to EVM.

2 Contract Fundamentals

Contracts establish a legally enforceable agreement between (or among) parties. In general, the parties are identified by the role they play in the transaction as opposed to organizations such as government, prime contractor, subcontractor, etc.

2.1 Government Role as Both the Sovereign and as the Buyer

When speaking of government contracts, it is necessary to separate the role of government as the sovereign (the maker and enforcer of laws) from that of government as a Buyer in a contractual transaction. This duality of roles can create certain roadblocks – especially when it comes to resolving disputes or claims. Special training is required to effectively manage government contracts from both the Buyer and Seller role to ensure the plethora of regulations, laws, and policies are properly observed. Contract requirements are not only enforceable by law: many of the requirements embedded in government contract are legally enforceable by federal statute.

Occasionally, the government in its role as sovereign can make a law that conflicts with the terms and conditions of the contract and it is then necessary for the parties to resolve that conflict within the boundaries of existing acquisition law and/or necessary contract modifications or actions. For example, if Congress were to withdraw support (and funding) for a major weapon program the contract might need to be modified or terminated for the convenience of the government through the appropriate procedures in the FAR or agency supplements.

2.2 Federal Acquisition Law

Congress, in its capacity of appropriating and authorizing funds for the operation of the government uses that authority to establish legal controls on how that money may be spent. These laws implement the will of the Congress and establish overarching acquisition principles such as The Competition in Contracts Act (CICA)[iii] requiring full and open competition; the payment of prevailing wages or minimum wages on government contracts; health and safety requirements; and various disclosure and ethical requirements.

2.3 Federal Acquisition Policy and Guidance

Other agencies of the Federal Government use their regulatory and policy making powers to exert influence on how the broad language of Congress is implemented. This is done through various policy documents and other writings. Three key agencies in policy making category are The Office of Federal Procurement Policy (OFPP), The Government Accountability Office (GAO), and the Office of Management and Budget (OMB).

With respect to the subject of this guide (Earned Value Management), two of the policy making agencies have had a direct input.

1. The Office of Management and Budget who published OMB Circular A-11 Preparation, Submission, and Execution of The Budget (current version). This document contains special guidance in Appendix K—Selected OMB Guidance and Other References Regarding Capital Assets dealing with Capital Investments (including Infrastructure projects) so as to comply with the requirements of Title V of the Federal Acquisition Streamlining Act of 1994 (FASA) and the Clinger-Cohen Act of 1996[iv].
2. The General Accounting Office (GAO) through their Cost Estimating and Assessment Guide GAO-20-195G (March 2020) and Schedule Assessment Guide GAO-16-89G (December 2015).

These source documents have been incorporated by reference into a single publication from OMB titled: Supplement to OMB Circular A–11: Planning, Budgeting, And Acquisition of Capital Assets (current version).

Subsequently, the FAR Council (comprised of representatives from various federal agencies) directs government agencies on particulars of how the policy guidance is implemented by subordinate agencies. The processes by which the regulatory guidance provided in FAR Part 34 - Major System Acquisitions, requires EVMS to be used “in acquisitions designated as major (system) acquisitions consistent with OMB Circular A-11, part 7.”

Because of the high cost and inherent risk associated with major systems and their acquisition the OMB has directed special management practices to oversee these programs and avoid costly delays and budgetary overruns: hence the language in the Federal Acquisition Regulation at FAR 34.201 Earned Value Management System – Policy states: “*An Earned Value Management System (EVMS) is required for major acquisitions for development, in accordance with OMB Circular A-11*.”

2.4 Government Contracting Regulations

Government agencies (e.g., Department of Defense, Department of Energy, Department of Interior, Department of Homeland Security, etc.) that fall under the Executive Branch of the United States Government – with minor exceptions – are all subject to regulations published in Title 48 of the Code of Federal Regulations (48 CFR) commonly known as the Federal Acquisition Regulation (FAR). Agencies may elect to expand upon or supplement the regulatory guidance in the FAR by publishing supplements such as the Defense Federal Acquisition Regulation System (DFARS) which is applicable to the military branches and policy instructions that establish specific rules and procedures for implementing the regulatory guidance.

The acquisition regulations incorporate the sum total of acquisition law and policies into a single authoritative (and binding) source that establishes the ‘rulebook’ for government contracting officials when conducting business with the public.

2.5 Contract Risk Management

It is important to understand the specific role EVMS plays in the acquisition process. Agencies make potentially risky investments when acquiring new and technologically sophisticated systems. Identifying and controlling the sources of that risk is an inherent function of acquisition management. This topic is fully discussed in OMB Circular A-11 in the Capital Programming Guide: “*Earned Value Management (EVM) and risk management are management tools used successfully in both the public and private sectors to mitigate risks in developing capital assets. Agencies must develop a level of expertise with both tools that is appropriate to the size and nature of their capital asset portfolio.”* Note: Additional Risk Management guidance may be found in the NDIA IPMD Planning and Scheduling Excellence Guide[v].

EVMS is therefore seen by agency leadership as an effective risk reduction tool that: “… *Implemented properly, an EVM system will measure progress against a baseline and provide an early warning of cost overruns and schedule delays.*”

It is the availability of detailed performance data created and tracked during contract performance that makes an EVMS a significant control against over-budget or over-schedule outcomes. Such data also facilitates the timely and accurate evaluation and reporting of contractor performance in the Contractor Performance and Reporting System (CPARS). Therefore, it is incumbent on the acquisition team to acquire the expertise to make full use of the data through interpretive analysis and then proactively integrate their findings into an overall program and risk management strategy.

2.6 Selection of Contract Type

Contract type is selected by the acquisition team during acquisition planning generally based upon a business decision concerning the type of goods or services to be acquired, the degree of specificity in the requirements or specifications (with vague requirements being riskier than clear-cut requirements), and an apportionment of risk between Buyer and Seller.

Contracts are often classified with respect to two factors:

1. The payment terms associated with the contract. Common types of payment terms are Fixed Price whereby the Seller is paid an agreed upon (fixed) price for rendering the service or delivering the supplies specified and Cost (or cost reimbursement) type contracts whereby the Seller is paid for their actual (and allowable) costs of performing the work typically with some profit or fee being included in the overall price. These two basic types are then subject to a number of sub-types such as Cost-Plus Fixed Fee (CPFF), Fixed Price Incentive (FP-I), Fixed Price with Economic Price Adjustment (FP-EPA) etc. The important attribute of contract type – be it fixed price or cost reimbursement – is the allocation of risk concerning cost overruns between Buyer and Seller.
2. The nature of the goods or services being procured. The FAR makes a clear distinction between items which are commercial in nature and those that are not. Contracts for commercial items are generally fixed price contracts for "*non-developmental"* items and as such are exempt from Earned Value Management reporting. Contracts that are *developmental* (be they fixed price or cost type) in nature entail higher risk because the items being procured do not yet exist (or exist in the required form) and there can be significant risk associated with progressing from design to production for these items.

Contract types fall into two categories: fixed-price contracts and cost-reimbursement contracts.

<u>Fixed Price</u> contracts offer the Buyer the least risk because costs are generally constrained by the contract to the agreed upon fixed price. Should the Seller incur additional costs, the Buyer is protected (in most cases) from a price increase.

<u>Cost-reimbursement</u> contracts offer the Seller protection from cost increases such that those costs (to the extent they are allowable) may be passed on to the Buyer.

Consequently, the Buyer tends to prefer fixed price contracts over cost type contracts since they offer less cost risk.

> "*The Government's preferred contract type is Firm-Fixed Price (FFP), because this contract type is used when the risk involved is minimal or can be predicted with a reasonable degree of certainty. When used for acquisitions with minimal risk this type of contract has the greatest probability of successful achievement of its cost, schedule and performance goals. The use of an EVM system on FFP contracts is based on the nature of the work. If this type of contract is used when the acquisition has a significant amount of development work, the Government is required to include the FAR EVM requirements in the contract.*"[vi]

While the cost risk to the Buyer is low on FFP contracts, the Seller assumes a majority of the cost risk. If the Buyer does not require a formal EVMS on an FFP contract, the Seller may wish to utilize EVM/EVMS internally to manage the contract.

When contracts are not fully definitized, an Undefinitized Contract Action (UCA) may be utilized so a Seller may start work and invoice for work performed during negotiations. DFARS defines UCAs as those contract actions for which the contract terms, specifications or price are not agreed upon prior to the beginning of contract performance. The DFARS supplements the FAR by including such actions as contract modifications for additional supplies or services, task orders and delivery orders. The DFARS specifically excludes change orders, administrative changes, funding modifications or any other contract modifications that are within the scope and under the terms of the contract.

2.7 Research and Development (R&D) and Major Systems Acquisitions

Often the acquisition effort centers on acquiring an item or system that does not exist or does not exist in a form that meets the specific requirements of the government. Frequently these acquisitions are focused on acquiring new weapon systems or data processing (infrastructure) systems. OMB Circular A-11 requires EVMS on such acquisitions of ‘capital’ (also known as major) systems and (modified) commercial systems with a *development effort*.

The development effort typically associated with these acquisitions are usually contracts for research and development (see FAR Part 35) or the production of a major system (see FAR Part 34). Major systems frequently require significant design, testing and other effort to refine and productize a system or equipment such as when advancing a prototype developed under a R&D effort into a deployable (major) system.

Basic research (general knowledge gathering) is often vague and subject to frequent shifts in direction as the effort progresses. Applied Research (per FAR 35.001, “attempts to determine and exploit the potential of scientific discoveries or improvements in technology, materials, processes, methods, devices, or techniques; and attempts to advance the state of the art”) may be the “development” portion of an R&D effort and should be considered for EVM, provided it meets the other criteria. It may also include the “development” effort of a fixed price production contract which can entail a high degree of uncertainty. These efforts are most commonly associated with cost type contracts. Per FAR Part 34.201, EVMS may be used for those portions of a fixed price contracts where development (and perhaps testing such as first article tests) is a distinct contract effort. When this is done, the development phase of the project may be (or frequently is) segregated into a separate Contract Line-Item Number (CLIN) that is a cost reimbursement type effort.

This split cost/fixed price contracting technique is frequently seen in complex acquisitions for modified commercial items or prototype/production contracts by assigning unique CLINs to specific phases or requirements and then assigning each CLIN an appropriate contract type. In the case of a major weapons system this would allow the Buyer the flexibility, for example, to require EVMS on the development effort under a cost reimbursement contract yet not require EVM on the follow-on fixed price production effort. Such a hybrid arrangement would be consistent with the cost-benefit principle for applying EVMS by only requiring EVM reporting on the highest risk portion of the effort and avoiding potentially unnecessary cost or administrative burden on lower risk contract elements.

An EVMS may also be required on incentivized contracts such as cost-plus incentive fee (CPIF), cost-plus award fee (CPAF) and fixed-price incentive fee (FPIF) development and integration contracts. These contract types provide the Seller with a paid incentive based on (in part) cost and schedule performance. In these situations, the detailed performance data provided by EVM reporting is beneficial in transparent negotiations of incentives since quantifiable performance data is available to assist in the contractor’s performance evaluation.

2.8 Privity of Contract

An important contract principle that must be observed when managing contracts is that only the parties to an agreement have enforceable rights with respect to other parties. This principle is known as Privity of Contract and is important to note with respect to EVM because the government imposes the requirement for EVMS on the prime contractor who then – to the extent required by their prime contract – flow such requirements down to their individual subcontractors. (*"EVMS requirements will be applied to subcontractors using the same rules as applied to the prime contractor."* – FAR Part 34.201)

The important distinction is that the Seller (in this case the 'Prime Contractor') has a dual role in the contractual relationship as they are a Seller to one party under prime contract, yet they are also a Buyer with respect to their lower tier subcontractors under the various contractual instruments (subcontracts, purchase orders, teaming agreements, etc.) executed with them.

Consequently the 'Prime Contractor' must not only comply with the contractual requirements of their contract with the Buyer, but they must also take steps to ensure their lower tier suppliers are evaluated to see if they are subject to specific contractual requirements (e.g., Earned Value) and ensure the appropriate contractual terms and conditions are included in subcontracts. This responsibility also includes ensuring the subcontractors pass (flow) down mandatory requirements to second tier and lower subcontractors, as necessary.

Privity of contract does not generally allow the government's Buyer (i.e., the PCO or ACO) to directly interact with or direct the Prime's subcontractors. However, the government may use various contractual provisions, including audit authority where necessary, to ensure the prime is fulfilling their responsibility under their contract, both as the Seller and as a Buyer from their various subcontractors or suppliers.

2.9 Contract Changes

Contracts are frequently changed during their execution phase. The following discussion is based on the most common scenario where changes are made by an authorized person following a prescribed process (i.e., the Changes Clause). While there are other scenarios possible - they are beyond the scope of this publication. All government contracts, including those with EVMS contractual requirements, are subject to three fundamental rules.

1. Changes may only be made in the manner specified in a *Changes* clause of the contract – often (especially in government contracts) requiring they be made by an authorized person (i.e., the "contracting officer"),
2. Changes must be within the scope of the contract, and
3. Changes must be communicated in writing.

Contracts subject to EVMS have an additional requirement to adjust the Performance Measurement Baseline (PMB) to reflect the impacts caused by the change. If the change adds or removes work or changes the schedule, portions of the baseline will need to be adjusted to incorporate those changes.

2.9.1 Authority to make a change

The first important element of this principle is that the change must be made by an authorized person or "Contracting Officer." The FAR specifies (Only) "*Contracting officers have authority to enter into, administer, or terminate contracts and make related determinations and findings. Contracting officers may bind the Government only to the extent of the authority delegated to them."* (Federal Acquisition Regulation 1.602-1)

While the preceding guidance is clear, *who* (specifically) is the “Contracting Officer?” In actuality there are usually two individuals fulfilling the role of *contracting officer* and are usually known as the Procuring Contracting Officer (PCO) and the Administrative Contracting Officer (ACO). The PCO is the individual that manages the acquisition of the products or services being acquired and awards the contract. The ACO oversees compliance with various administrative aspects of the contract such as approving proposed indirect rates, managing government property, and assuring compliance with the EVMS. Either or both individuals have authority to issue written changes to the contract.

Excluded from this group is a third individual known as the Contracting Officer’s Representative (COR). The COR is <u>not</u> a contracting officer – their role is to “*assists in the technical monitoring or administration of a contract.*” (FAR Part 1.604). The COR acts as the Buyer’s eyes and ears by monitoring and reporting on Seller performance and providing *technical guidance* in the performance of the contract work.

CORs must be authorized (appointed) in writing by the contracting officer to perform specific technical or administrative contract functions, and per DFARS 201.602-2, ”…*must receive a written designation of their authority to act on behalf of the contracting officer*.” The COR lacks the authority (e.g., “warrant” or other delegation of authority) to direct changes that effect the cost, schedule, or other contractual requirements – that authority is reserved by the PCO/ACO.

There is a risk that Sellers may confuse *technical guidance* with contractual direction. If any doubt exists concerning whether guidance from a COR or other individual constitutes contractual direction (and potentially a change,) the Seller should seek (written) clarification from the contracting officer.

2.9.2 Baseline Maintenance

Contracts subject to an Earned Value Management System are controlled by tracking actual cost and schedule performance against a project management plan - the PMB. Changing the amount of work or the scheduled completion date(s) for contract deliverables via a contract modification may entail a revision of the PMB and may impact such things as reported percent complete or the project’s Estimate at Completion (EAC). Consequently, each change to the contract must be evaluated with respect to not only the contractual terms and conditions but also with respect to any change to the EVMS baseline.

Baseline maintenance is a configuration managed process and is subject to stringent administrative control. If the amount of work required or the schedule is redefined via one of a limited number of permissible events (a contract change being one of them) then the PMB for the *affected sections* should be updated through a controlled process to reflect those changes. Unaffected portions of the PMB should not be amended so as to maintain an accurate depiction of the project management history and status.

If the change is significant - such as the award of a contract option for additional quantities or additional phases - then a new contract baseline may need to be established and an Integrated Baseline Review (IBR) may be required.

3 Program/Project Management (P/PM) Fundamentals

This section describes key program management activities in relation to the EIA-748 guidelines. When government regulations/clause(s) in the contract require use of an EIA-748 compliant EVMS, the program and organization's policies and procedures must comply with the EIA-748. The contracting community should understand the purpose and use of the contract data items and program processes, as they affect the program management team's ability to plan, monitor, and control program execution.

The Seller's Program/Project Manager (PM) and/or Program Management Office (PMO) is responsible for performing the requirements of the program and delivering the products required by the contract. As described later in the Pre-Award and Award - Solicitation and Project Start-up Section, the requirement for an EVMS is established as part of the solicitation phase of the program. During the solicitation phase, the PM/PMO identifies and proposes a technical approach and cost/pricing to accomplish the work scope. Appropriate planning during the solicitation phase is key to running a successful program/project. Poor/insufficient planning and estimating leads to additional execution risks/issues, increased contract management actions, and could lead to unmanageable issues or project failure.

When EVM/EVMS is a contract requirement, the Seller's PM/PMO must maintain traceability between key contractual documents and deliverables as part of program execution. The Seller's PM/PMO begins development of the PMB and documents program traceability in the solicitation phase, to facilitate program planning for delivery, along with identification of organizational areas of responsibility, and development of cost or pricing estimates. The program artifacts may include, and are not limited to, the following:

- Work Breakdown Structure (WBS) – Major DoD Acquisitions utilize the MIL-STD-881, Work Breakdown Structures for Defense Materiel Items (current version)
- WBS Dictionary
- Integrated Master Plan (IMP)
- Integrated Master Schedule (IMS)
- Time-phased budget/PMB
- Risk and Opportunity (R&O) Management Plan and Log
- Program/Project Management Plan (PMP)
- Contract-required reporting
- Integrated Baseline Review (IBR) artifacts
- Systems Engineering Management Plan (SEMP)

The program plans will describe the project management processes used to achieve specific project objectives. P/PM processes focus on the fundamental preparations for planning and executing the program.

The EIA-748 guidelines are grouped into five process categories: Organization; Planning, Scheduling, and Budgeting; Accounting Considerations; Analysis and Management Reports; and Revisions and Data Maintenance. The related program/project activities are summarized below by the EIA-748 process categories.

3.1 Organization

Organization describes how to decompose the contract's technical scope and objectives, how the program will organize to perform the work, and how the various business systems will integrate to control the program. Organization starts with the Statement of Work (SOW) and the technical specifications that define the work scope to be accomplished as part of the contract. The contractor will further decompose the work into manageable pieces. Effective project management organization requires that the technical plan address all the contract's technical scope, allowing the program manager to track progress against the contract requirements.

The Work Breakdown Structure (WBS) establishes a structure for the contractor to define and estimate the work in manageable portions to complete the contract scope. The contractor's Organization/Organizational Breakdown Structure (OBS) is used to align the organizations and individuals accountable for managing and accomplishing the work identified in the WBS. These individuals are referred to as Control Account Managers (CAMs). This identification of organizations must include effort assigned to Subcontractors and/or Inter-organizational Work Transfers/Orders.

3.2 Planning, Scheduling, and Budgeting

The performing organizations typically have standard planning, scheduling, and budgeting processes and procedures. These processes may be tailored to address specific program requirements. The program manager is responsible for establishing a technical plan in accordance with the program and engineering requirements, and the processes described in the PMP and the SEMP documents. The EIA-748 requires establishment of an IMS, and the associated PMB and Control Account Plans (CAPs) that detail the work to be done by each CAM.

When the contract requires an IBR, the planning, scheduling, and budgeting baseline documentation are jointly reviewed by the Buyer and the Seller at the IBR event. The objective of the IBR is to confirm mutual understanding and acceptance of the project's integrated baseline. The Buyer is responsible for holding the IBR as soon as practicable and within the time frame specified by their Agency's policies. Contracts that are subject to DFARS must complete the IBR no later than 180 days (i.e., first six months) after contract award. The objective of the IBR does not include a comprehensive review of the Seller's EVMS. For additional information, see the Post Award Orientation and Integrated Baseline Review (Buyer) and Post Award Orientation and Integrated Baseline Review (Seller) sections, and the NDIA IPMD IBR Guide.

Note that although the technical plan must address all contracted work, some program plans mature incrementally where the near-term plan is detailed, and the far-term plan is more broadly defined. Rolling wave planning windows may be used by a program, to iteratively detail plan the near-term work leading up to one major event/milestone at a time. Programs that are using agile development methods may use their project roadmap and a standard planning window (time-box), typically three months or less, to detail plan the work.

3.3 Accounting Considerations

The Accounting Considerations ensure all costs associated with accomplishing the program work scope will be tracked and reported at the level the work is performed. All direct and indirect financial transactions will be documented, approved, and recorded in the financial accounting system consistent with the company's Accounting System – one of the six Contractor Business Systems typically reviewed by the Defense Contract Audit Agency (DCAA). The company's accounting system should be compliant with U.S. Generally Accepted Accounting Principles

(GAAP) and applicable Cost Accounting Standards (CAS) as documented in the company's Cost Accounting Standards Board Disclosure Statement (CASB DS-1).

The accounting system will be set up for each program to capture and report actual direct costs for labor, material, subcontract, and other direct costs as well as associated indirect costs. The accounting structure (project's direct charge numbers) must align with the CAs or lower to allow for reasonable direct costs to be collected.

3.4 Analysis and Management Reports

The Analysis and Management Reports describe how to use Earned Value Management performance data to identify and act on early technical, schedule, and/or cost deviations from the PMB. These processes should be addressed in the PMP and SEMP.

A key benefit of earned value management is the ability to accurately report, analyze, and act upon the program's technical progress independent of resources expended. The baseline plan will define objective criteria for success from which to claim progress, and the contract reporting will provide program performance updates. The contract specifies the required format for reporting, such as the DI-MGMT-81861 (Revision C), Integrated Program Management Data and Analysis Report (IPMDAR) or the DI-MGMT-81861 (Revision B), Integrated Program Management Report (IPMR) – utilized by DoD and a number of non-DoD contracts that are not reporting into DoD's EVM-CR[vii] site. Contract-required reporting may include, but is not limited to, the following:

- Cost against the WBS
- Cost against the OBS
- Significant changes to the baseline
- Staffing projections
- A textual description of substantial variances and corrective action plans
- A schedule in a raw data format
- A raw digital data file containing all the information, allowing the ability for using off-the-shelf applications for detailed analysis

Contract-required reporting may identify significant cost, schedule, and at completion variances based on pre-determined thresholds as described in the Earned Value Management Fundamentals section of this document. Significant variances may be described, a root cause analysis performed, and a corrective action plan documented.

One of the key elements of reporting is the ability for the contractor and the government to develop an Estimate at Completion (EAC) and an Independent Estimate at Completion (IEAC) based on current performance, trends, and evaluation of the current risks. Typically, a comprehensive EAC is developed by the contractor at least annually, but can happen every six months, or as part of each rolling wave planning process.

3.5 Revisions and Data Maintenance

The Revisions and Data Maintenance processes describe the configuration management process for maintaining the PMB throughout the program's performance period. Reference the Compile and Submit Baseline Changes (as applicable) section for more details. Changes to the PMB can occur for a variety of reasons, including but not limited to the following:

- Monthly adjustments to forecast may invoke a series of Baseline Change Requests (BCR)
- An Over Target Baseline or Over Target Schedule replan
- Rolling Wave planning will refine PPs into WPs
- Re-setting the baseline because the plan has drifted too far from the existing baseline
- Engineering Change Proposals (ECPs) and Contract Modifications

4 Earned Value Management Fundamentals

The success or failure of a business depends on how well they manage their costs in relation to their expenses. This includes delivering goods and/or services to customers in a timely manner and at a reasonable cost.

The Office of Management and Budget (OMB) asserts that utilization of an EVM/EVMS, is a vital process for major investments. Per the OMB Circular A-11 Capital Planning Guide (version 3.1): “A critical component of risk management on major investments is the use of EVM. Implemented properly, an EVM system will measure progress against a baseline and provide an early warning of cost overruns and schedule delays. Most likely, a practical application of EVM will involve tailoring the principles to a project’s unique circumstances. When an EVM system is required (see Federal Acquisition Regulation 34.2), the cost and schedule variances should be reported to senior management at least monthly.”

4.1 Earned Value Management versus Earned Value Management System

Earned Value Management (EVM) is a management tool in which, scope, schedule, and budget are integrated to better assess P/PM performance. It places the project results in context with respect to budget planned and expended. Many businesses rely on simple variance analysis to compare actual spending to planned spending, but neglect additional data for the earned value (i.e., completed work scope/units) – what did you get for the money you spent? Did we get a dollars’ worth of work (value) for each dollar spent? It is the ratio of that ‘value earned’ (i.e., work completed) to cost that is a fundamental underpinning of EVM.

An Earned Value Management System (EVMS) includes the formalized management system (or controls) characterized by EIA-748 and implemented by the business through a system of written procedures, management oversight, and periodic audits. The use of a compliant EVMS can assist a business with establishment of sound business practices, as well as assure the government that there is not fraud, waste, and abuse of contract funds.

4.2 Overview of EVM and EVMS Concepts

The use of an EVMS strategically augments good project management to facilitate the planning and control of cost and schedule performance. The key practices within an EVMS include establishing a PMB and measuring and analyzing performance against the baseline. The PMB is a time-phased budget plan against which project performance is measured. It includes the Distributed Budget (DB) (i.e., CAs, SLPPs, WPs, and PPs) and Undistributed Budget (UB) without management reserve and profit/fees.

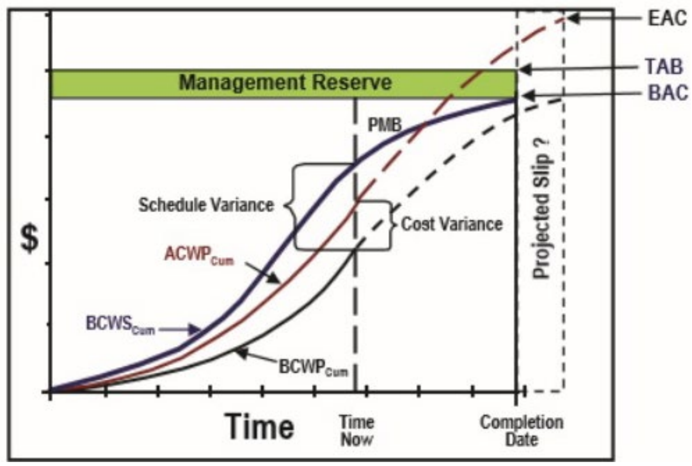
Establishing a PMB is accomplished by decomposing the work scope into a manageable level, assigning management responsibility, developing a time-phased budget for each work task, and assigning appropriate EV measurement techniques to measure work accomplished (i.e., identifying work packages within the PMB). Once the PMB is established, its integrity must be maintained throughout the life of the project, and all changes must be made through a defined change control process.

On a regular basis (i.e., monthly at a minimum), performance is measured against the plan (i.e., baseline) to assess program performance and support contract-required reporting. Performance is measured by objectively measuring the physical work progress, and credit for that progress is taken in accordance with established EV techniques. Performance measurement helps identify deviations from the baseline plan and allows for corrective or preventative actions to be taken. Throughout project execution, the number of resources being used should also be recorded. Once status and resources are both defined for the same time period, then we can begin to analyze the cost and schedule performance and where variances are occurring. We should be reporting performance problems and taking actions to correct performance. The team should also analyze what it will cost to complete the scope of work remaining on the project. Then these items (performance/variances/and cost of work remaining) can be discussed with your team leadership and any appropriate actions taken.

Descriptions of the Key Earned Value Management Elements

See below for earned value management definitions, and the Defense Acquisition University (DAU) Gold Card figure for a pictorial representation.

DAU Gold Card



- **Planned Value (PV)** or **Budgeted Cost for Work Scheduled (BCWS)** describes how far along project work is supposed to be at any given point in the project schedule. It is a numerical reflection of the budgeted work that is scheduled to be performed and is the established baseline against which the actual progress of the project is measured. Once established, this baseline may only change to reflect cost and schedule changes necessitated by changes in the scope of work, add risk mitigation, issues, or opportunity tasks, and for correction of errors.
- **Earned Value (EV)** or **Budgeted Cost for Work Performed (BCWP)**, is a snapshot of work progress at a given point in time. It reflects the amount of work that has been accomplished to date (or in each time period), expressed as the planned value for that work.
- **Actual Cost (AC)** or **Actual Cost of Work Performed (ACWP)**, is an indication of the level of resources that have been expended to achieve the amount of work performed to date (or in a given time period).
- **Budget at Completion (BAC)** represents the total Planned Value for the project, including the Undistributed Budget (UB – defined below) this is the final data point on the PMB.
- The **Schedule Variance (SV)** determines whether a project is ahead of or behind schedule. It is calculated by subtracting the Planned Value or BCWS from the Earned Value or BCWP. A positive value indicates a favorable condition, and a negative value indicates and unfavorable condition. This measure can be for the current period or cumulative to date.
- **Schedule Performance Index (SPI)** shows how you are progressing compared to the planned project schedule, which is expressed as the ratio of Earned Value or BCWP to Planned Value or BCWS. This gives you information on the time efficiency of your project. This measure can be for the current period or cumulative to date.
- **Cost Variance (CV)** indicates whether a project is under or over budget. This measure is determined by subtracting the Actual Cost or ACWP from the Earned Value or BCWP. This measure can be for the current period or cumulative to date.

- **Cost Performance Index (CPI)** helps you analyze the cost efficiency of the project. It measures the value of the work completed (Earned Value or BCWP) compared to the Actual Cost or ACWP spent. This measure can be for the current period or cumulative to date.
- **Estimate to Complete (ETC)** shows what the work remaining will cost. The ETC may be calculated, using the Budgeted Cost of Work Remaining (BCWR) and selected performance factor, or manually estimated using a bottoms-up technique. The CAM is accountable for determining and/or evaluating the ETC for an individual CA.
- **Estimate at Completion (EAC)** projects the final cost of the project, as well as individual CAs, if current performance trends continue. There are various EAC calculations that may be used to help predict best case, worst case, and most likely final costs at the end of the project. The EAC is comprised of Actual Costs or ACWP to date plus the latest ETC.
    - **Independent Estimate at Completion (IEAC)** is typically calculated off historical cost performance to date for minimum, and cost and schedule performance to date for maximum. The trend over time of IEAC will tell you whether the probability of achieving your current EAC is increasing or decreasing.
    - **Comprehensive EAC (CEAC)** is a reassessment or 'bottoms up' estimate of the cost to complete the work remaining plus actual costs spent to date. Comprehensive EACs are generated and reviewed at least annually on contracts with EVMS requirements. EAC development gives a CAM the opportunity to re-evaluate a CA with significant risks or variances and should be compared to previous EAC inputs. They are often prepared at the start of a major project phase, such as the start of production.
- **To Complete Performance Index (TCPI)** indicates the future required cost efficiency (i.e., effort) to achieve a target. This can be based on BAC or EAC. The differences between the CPI and the $TCPI_{BAC}$ or $TCPI_{EAC}$ indicate the achievability or realism of the projected EAC and may be used by management to evaluate the EAC realism. Any significant difference between the CPI and the TCPI, should be accounted for by management in their forecast of the final cost.
- **Variance at Completion (VAC)** shows the team whether the project will finish under or over budget and is calculated by subtracting the EAC from the BAC (negative indicates an overrun and positive indicates an underrun). While variance and efficiency thresholds are commonly used in EVM, trends in the performance measures for a project can help a PM decipher or anticipate a potential performance problem.
- **Management Reserve (MR)** is an amount of the contract budget withheld by the Seller for management control purposes, rather than designated for the accomplishment of a specific task or set of tasks. It is held and utilized through a disciplined process. It is used to plan additional (previously unplanned) work that is within the authorized work scope of the contract. It may not be used to offset or minimize existing variances. MR is part of the Contract Budget Base (CBB) but is not part of the PMB.
- **Undistributed Budget** (UB) is a temporary holding account for budget associated with specific work scope or contract changes that have not been assigned to a CA or SLPP. UB is included in the PMB, which is a part of the CBB. Budget should be distributed from UB to the PMB (as soon as practicable) for three primary circumstances:
    - At the beginning of the contract, the negotiated contract value minus management reserve and fee (if applicable), should be entered into UB

    - Upon completion of a negotiated contract modification
    - Prior to a negotiated contract modification, with budget allocated through Authorized Unpriced Work (AUW)
- An **Over Target Budget** (OTB) is a revised plan that results in budget allocations in excess of the CBB and, possibly adjustments to previously reported variances.
- An **Over Target Schedule** (OTS) refers to a revised schedule, activities/milestones, to new dates exceeding the contractual milestones. These new dates are for performance measurement purposes only and do not represent an agreement to modify the contract terms and conditions.

Additional EVM definitions and concepts may be found in the NDIA IPMD Master Definitions List for IPMD Guides[viii] and other NDIA IPMD publications.

5 Roles and Responsibilities

This section includes Buyer and Seller role descriptions and activities that encompass the pre-award, award, and post award contract life cycles. The Buyer and Seller responsibility matrices include section links to the Pre-Award and Award and Post Award sections, which include information on processes, guidance, and best practices from solicitation to closeout of the contract.

5.1 Buyer Role Descriptions

The table below outlines general Buyer roles and related contract and project management activities throughout the contract and project life cycle. This section offers general, high-level guidance for every organization, refer to your organization's policies and procedures for specific requirements and guidance.

Role	Description
Procurement Contracting Officer (PCO/CO)	Authority to enter into, administer, or terminate contracts and make related determinations and findings. Contracting officers are appointed to the position by a competent authority via a document (warrant or letter of appointment) clearly stating the limits of their authority. Fill many roles in the acquisition process including the Procurement Contracting Officer (PCO), Administrative Contracting Officer (ACO), Terminating Contracting Officer (TCO), or that of a Contracts Specialist. Depending on the size and complexity of the contract, these responsibilities may be delegated by the PCO to other contracting officers or retained by the PCO.
Contract Specialist (CS)	Administratively assists the Contracting Officer in the preparation of contract documents and may be delegated other activities usually performed by the CO - with the exception that the Contract Specialist lacks the authority (e.g., warrant) to bind the government. Consequently, contract specialists are dependent on the CO to provide contractual direction to the contractor or approve documents prepared by them.
Administrative Contracting Officer (ACO)/Cognizant Federal Agency Official (CFAO)	Only at the explicit direction of the PCO, performs analysis and uses risk management techniques to monitor all aspects of contract performance and to provide appropriate insight into selected contractor systems or procedures. When DCMA is the ACO, they are responsible for providing business system status determinations for defense contractors. For primary duties, see FAR Subpart 42.3 and DFARS Subpart 242.3, as well as those duties that may have been delegated in writing by the PCO.
Termination Contracting Officer (TCO)	Executes duties in accordance with FAR 49.105, Duties of Termination Contracting Officer. After Issuance of Notice of Termination, negotiate termination settlements with the contractor, including no-cost settlements, if appropriate.
EVM Analyst (EVMA)	Supports programs acquisition by providing EVM expertise and advice to the program team and working with the program team to establish and manage baseline, collect program performance metrics, and analyze program performance.

Role	Description
Contracting Officer Representative (COR)	A non-contracts person who performs specific technical or administrative responsibilities delegated by the Contracting Officer. COR responsibilities may vary from contract to contract based on the delegation letter written by the PCO. CORs lack the authority to direct contractual changes and may not – without CO approval – substantively change the nature or the quantity of work to be performed, cost, or schedule.
Program Manager (PM)	The individual responsible for managing the acquisition program. The PM is accountable for the overall outcome of the project, program, or contract and is responsible to ensure the contractor meets the requirements for the execution collaborating with the COR.
Engineer/Technical Lead (ENG/TL)	Plans, manages, or performs analysis, research, design, development, fabrication, installation, modification, or sustainment of systems or systems components across the entire life cycle of a procurement/project action.
Business Finance Analyst (BFA)	Manage financial aspects of a defense acquisition program throughout the total acquisition life cycle; interpret and apply Fiscal/Appropriation laws, policies, and directives. Advise acquisition decision makers on business and financial management of programs. Evaluate affordability of program by analyzing EVM performance indicators, budget controls, and cost estimations data to facilitate tradeoff decisions by program managers/internal government stakeholders.
Control Account Manager (CAM)	Responsible for the planning, coordination, and achievement of all work within a CA. The CAM provides a single authority for all scope, technical and cost issues.
EVMS Reviewers	Responsible for reviewing compliance of the Seller's EVMS based on Agency and contract-specific requirements.
Accounting System Auditors	Responsible for reviewing compliance of the Seller's Accounting System. Activities include audit/review of the Disclosure Statement, Forward Pricing Rates, and Indirect Cost Submission.

5.2 Buyer Roles and Responsibilities Matrix

The Roles and Responsibilities Matrix (RACI) below outlines the Buyer roles and responsibilities throughout the contract and project life cycle by contract phase. *Note: There are multiple roles listed under responsible since the team/personnel fulfilling the role will vary based on the size and complexity of the agency/organization.*

Phase 1 - Pre-Award (Buyer Activities)[ix]	Responsible	Accountable	Consulted	Informed
Analyze Program Needs and Identify Acquisition Strategy				
• *Identify Program Needs/Requirements*	PM	PM	ENG/TL, BFA	PCO/CO, COR, CS
• *Identify Proposed Contract Type / acquisition strategy*	PM	PCO/CO	ACO/CFAO	BFA, COR, CS
Identify Management Plan and Draft Solicitation Documents				
• *Prepare Draft Statement of Objectives/Work*	PM	PCO/CO	ENG/TL, CAM	COR, CS

Phase 1 - Pre-Award (Buyer Activities)[ix]	Responsible	Accountable	Consulted	Informed
• *Prepare Rough Order of Magnitude Government Estimate*	ENG/TL, BFA	PM	CAM	PCO/CO, COR, CS
• *Solution and Market Research*				
○ *Determine if Commercial or Developmental Item Solution*	PCO/CO	PCO/CO	ACO/CFAO, PM, ENG/TL, BFA	COR, CS
○ *Perform Market Research*	PCO/CO, PM	PM	PCO/CO	COR, CS
○ *Review Existing Systems*	PM	PM	ENG/TL	PCO/CO, COR, CS
• *Develop Product or Service Specifications*	ENG/TL	PM	BFA	PCO/CO, COR, CS
• *Identify Management Approach*				
○ *Identify if EVMS will be required or recommended and Draft Management Approach*	PM	PM	EVMA	PCO/CO, COR, CS
○ *Draft Contract Administration (PCO or ACO) Plan*	PCO/CO	PCO/CO	ACO/CFAO, PM, ENG/TL, BFA	COR, CS
• *Prepare Program Management Documents*				
○ *Draft top Level (1 and 2) WBS*	ENG/TL	PM	EVMA, ENG/TL, BFA, CAM	PCO/CO, COR, CS
○ *Draft Integrated Master Plan (IMP), per Agency guidelines (e.g., 5000.02)*	ENG/TL	PM	EVMA, CAM	PCO/CO, COR, CS
○ *Draft Milestone Schedule, per Agency guidelines (e.g., 5000.02)*	ENG/TL, PCO/CO	PM	EVMA, CAM	COR, CS
○ *Draft Quality Assurance Surveillance Plan (QASP)*	ENG/TL, PCO/CO	PM	ACO/CFAO, ENG/TL, CAM	COR, CS
• *Publicize Opportunity (Pre-Solicitation Notice)*	PCO/CO	PCO/CO	PM	COR, CS
Identify Specific Earned Value Management Requirements				
• *Review PM recommendations for EVM*	PCO/CO	PCO/CO	EVMA, PM	COR, CS
• *Conduct Cost-benefit analysis where required*	BFA	PM	PCO/CO	COR, CS

Phase 1 - Pre-Award (Buyer Activities)[ix]	Responsible	Accountable	Consulted	Informed
• *Identify waiver requirements (if any) and process waiver(s) for approval*	PM	PCO/CO	EVMA	COR, CS
• *Determine Integrated Baseline Review requirements (Pre or Post Award)*	PM	PM	PCO/CO, EVMA, ENG/TL, BFA	COR, CS

Phase 2 - Solicitation Preparation and Release (Buyer Activities)[x]	Responsible	Accountable	Consulted	Informed
Determine EVMS Applicability				
• *Determine applicable EVM Clause(s) to include*	PCO/CO	PCO/CO	EVMA, PM	COR, CS
• *Determine Reporting Requirements and Frequency*				
○ *Prepare Draft CDRLs or data submittal requirements*	PCO/CO	PCO/CO	EVMA, PM, ENG/TL, BFA	COR, CS
○ *Identify Reporting Format(s), WBS, IMP, CFSR, CSDR and other CDRL requirements*	PCO/CO	PCO/CO	EVMA, PM	COR, CS
Prepare Program Management Documents				
• *Contract WBS*	*ENG/TL*	*PM*	*EVMA, CAM*	PCO/CO, COR, CS
• *Integrated Master Plan (IMP)*	*ENG/TL*	*PM*	*EVMA, CAM*	PCO/CO, COR, CS
• *Integrated Master Schedule*	*ENG/TL*	*PM*	*EVMA, CAM*	PCO/CO, COR, CS
Release Draft Solicitation(s) and Final Solicitation				
• *Prepare Draft Solicitation*	PCO/CO	PCO/CO		PM, COR, CS
• *Obtain Industry Feedback (e.g., Conduct Industry Day)*	PCO/CO	PCO/CO	EVMA, COR, PM, ENG/TL, BFA	PM, COR, CS
• *Prepare Final Solicitation*	PCO/CO	PCO/CO		PM, COR, CS

Phase 3 - Proposal Management (Buyer Activities)[xi]	Responsible	Accountable	Consulted	Informed
Prepare for Proposal Evaluation				
• *Obtain EVMS Business System Status*	*PCO/CO*	*PCO/CO*	*EVMA, PM*	*COR, CS*
• *Prepare Proposal Review Team*	*PM*	*PCO/CO*	*ENG/TL, BFA, CAM*	*COR, CS*

Phase 4 - Source Selection and Contract Award (Buyer Activities)[xii]	Responsible	Accountable	Consulted	Informed
Review and Evaluate Proposals				
• *Review and evaluate technical approach*	PM	PM	ENG/TL, CAM	PCO/CO, COR, CS
• *Review and evaluate management approach and description of EVMS*	PM	PM	EVMA, ENG/TL, EVMS Reviewers	PCO/CO, COR, CS
• *Review and analyze cost and schedule information*	PM	PM	EVMA, ENG/TL, CAM	PCO/CO, COR, CS
• *Review and evaluate Cost or Pricing Data*	PCO/CO	PCO/CO	PM, CAM, ENG/TL, BFA	COR, CS
Conduct Down-Selection (per the Acquisition Strategy)				
• *Determine Competitive Range*	PCO/CO	PCO/CO	PM, ENG/TL, BFA	PM
• *Conduct Discussions/Final Proposal Revisions*	PCO/CO	PCO/CO	PM, ENG/TL, BFA	PM
Conduct Source Selection and Conduct Due Diligence				
• *Determination of Responsibility of Seller(s) (i.e., Suppliers)*	PCO/CO, PM	PCO/CO	ACO/CFAO	PM
• *Discuss and Evaluate Proposal(s) and Select Source(s)*	PCO/CO, PM	PCO/CO	EVMA, ENG/TL, BFA	PM
Prepare Draft Contract Documents				
• *Include applicable EVM Clause(s)*	PCO/CO	PCO/CO	PM	PM
• *Include CDRLs or data submittal requirements*	PCO/CO	PCO/CO	PM	PM

Phase 4 - Source Selection and Contract Award (Buyer Activities)[xii]	Responsible	Accountable	Consulted	Informed
• *Identify Reporting Format(s) required*	PM	PM	EVMA, PCO/CO	PCO/CO, COR, CS
Determine if Contractor's EVMS Status/Plan is Acceptable	PCO/CO, PM	PCO/CO	EVMS Reviewers, ACO/CFAO	COR, CS
Conduct Pre-Award Integrated Baseline Review (when applicable)	PM	PM	EVMA, CAM, ENG/TL, BFA	PCO/CO, COR, CS
Negotiate and Award Contract	PCO/CO	PCO/CO	EVMA, PM, ENG/TL, BFA	COR, CS

Phase 5 - Contract Execution and Administration (Buyer Activities)[xiii]	Responsible	Accountable	Consulted	Informed
Post Award Orientation and Integrated Baseline Review				
• *Conduct Post Award Orientation Discussions (e.g., Kick-off Meeting, Review Transition-in Plan, etc.) (when applicable)*	PCO/CO, COR, PM	PCO/CO	COR, ENG/TL, BFA, CAM	COR, CS
• *Schedule and Conduct Post-Award Integrated Baseline Review (when applicable)*	PM, COR, PCO/CO	PCO/CO	ACO/CFAO, EVMA, COR, ENG/TL, BFA, CAM, EVMS Reviewers	ACO/CFAO, EVMS Reviewers, COR, CS
Review and Monitor Contract Reporting				
• *Conduct/Attend Integrated Product Team (IPT) Meetings*	ENG/TL	PM	PCO/CO, ACO/CFAO, EVMA, COR, BFA, CAM	EVMS Reviewers, COR, CS
• *Monitor Contractor Performance*				
○ *Identify and Manage Risks, Issues, and Opportunities*	EVMA, ENG/TL, CAM	PM	COR, EVMS Reviewers	COR, CS
○ *Monitor Contractor Cost, Schedule, and Technical Performance*	EVMA	PM	COR, ENG/TL, BFA, CAM, EVMS Reviewers	COR, CS

Phase 5 - Contract Execution and Administration (Buyer Activities)[xiii]	Responsible	Accountable	Consulted	Informed
○ *Review Cost and Schedule Variances and Narratives with Corrective Actions*	EVMA	PM	COR, ENG/TL, BFA, CAM, EVMS Reviewers	COR, CS
○ *Review and Approve Reprogrammed Baseline (when applicable)*	PM	PM	EVMA, COR, ENG/TL, BFA, CAM	ACO/CFAO, COR, CS
○ *Identify Potential Cost or Schedule Overruns and Determine Appropriate Strategies/Actions*	PM	PM	ACO/CFAO, EVMA, COR, ENG/TL, BFA, CAM, EVMS Reviewers	COR, CS
○ *Monitor Over-Target Baseline or Over Target Schedule* (when applicable)	PM	PM	ACO/CFAO, EVMA, COR, ENG/TL, BFA, CAM, EVMS Reviewers	COR, CS
• *Monitor and Issue Funds on Incrementally Funded Contracts*				
○ *Monitor Limitation of Funds/Cost Notices from Seller*	PM	PCO/CO	PCO/CO, COR, BFA	COR, CS
○ *Obtain and Distribute Funding to Ensure Uninterrupted Performance*	PCO/CO, PM, BFA	PCO/CO	ACO/CFAO, COR	COR, CS
Review EVMS and Contractual Compliance				
• *Verify Contractor is Fulfilling EVMS Contractual Requirements*	COR, PM	PCO/CO	EVMA	ACO/CFAO
• *Determine EVMS Implementation Status for Unreviewed Contractor EVMS (when applicable)*	EVMS Reviewers	EVMS Reviewers	EVMA, COR, PM	ACO/CFAO, PCO/CO, COR, CS
• *Assess EVMS and Develop Findings Report*	EVMS Reviewers	EVMS Reviewers	EVMA, COR, PM	ACO/CFAO, PCO/CO, COR, CS
• *Provide a "Final Determination" of EVMS Acceptability*	ACO/CFAO	ACO/CFAO	EVMS Reviewers	PCO/CO, COR, CS

Phase 5 - Contract Execution and Administration (Buyer Activities)[xiii]	Responsible	Accountable	Consulted	Informed
• *Review, Approve, and Monitor Corrective Action Plans*	EVMS Reviewers, ACO/CFAO	ACO/CFAO	EVMA	PCO/CO, COR, CS
• *Evaluate Contract Risks based on "Final Determination" of EVMS and Modify Contract (as needed)*	PCO/CO, PM	PCO/CO	EVMA, EVMS Reviewers, ACO/CFAO	EVMA
Review Proposed Contract Changes and Process Modifications				
• *Review and Process Proposed Scope Changes (as applicable)*	PM	PM	ACO/CFAO, ENG/TL, BFA, CAM	ACO/CFAO
• *Review and Process Equitable Adjustment Proposals (as applicable)*				
○ *Obtain and Negotiate Change Order or Equitable Adjustment Proposal*	PCO/CO	PCO/CO	ACO/CFAO, PM, ENG/TL, BFA, CAM	ACO/CFAO
○ *Identify Baseline Changes Resulting from the Change or EA*	PM	PM	ACO/CFAO, EVMA, ENG/TL, BFA, CAM	ACO/CFAO
• *Review and Process OTB/OTS proposals (as applicable)*	PM	PCO/CO	ACO/CFAO, EVMA, ENG/TL, BFA, CAM	ACO/CFAO
Analyze and Accept/Reject Periodic Forward Pricing Rate Proposals (when applicable)	ACO/CFAO	ACO/CFAO	PCO/CO	PCO/CO

Phase 6 - Contract Closeout or Termination (Buyer Activities)[xiv]	Responsible	Accountable	Consulted	Informed
Review Physical Work Completion	PM	PM	ACO/CFAO, EVMA, COR, ENG/TL, CAM, EVMS Reviewers	ACO/CFAO, EVMS Reviewers
Process Final Invoices				
• *Review Incurred Cost Submission with Actual Indirect Rates (when applicable)*	Accounting System Auditors	ACO/CFAO		PCO/CO, PM
• *Review/Audit Indirect Rates (when applicable)*	Accounting System Auditors	ACO/CFAO		PCO/CO, PM
• *Issue Final Payment Voucher*	BFA, PCO/CO	PCO/CO		PM
• *Release Withheld Funds*	BFA, PCO/CO	PCO/CO		PM

5.3 Seller Role Descriptions

The table below outlines general Seller roles and related contract and project management activities throughout the contract and project life cycle. This section offers general, high-level guidance for every organization, refer to your organization's policies and procedures for specific requirements and guidance.

Role	Description
Senior Management (MGT)	Those responsible for bid/no bid decisions and procurement or signature authority to commit the company to buying and selling activities. This may be a managing partner, or Vice President, or other.
Proposal Management Team (PMT)	Includes business development, capture management, and bid and proposal team that assists or leads proposal preparation.
Contracts Manager/Director (CM/D)	The contractor's principle senior leadership representative for all contractual and business matters involving the customer/client. As the duly authorized representative of the Contractor, Contract Managers/Directors are the equivalent of the government Contracting Officer, and they usually have real and/or delegated negotiation and signature authority for contract actions.
Contract/Subcontract Administrator (CA/SA)	Support the work of the Contract Manager/Administrator/Director and work closely with Business Development team and the Program/Project Manager. In some organizations, this role is integrated with the role of the Contract Manager/Administrator/Director.
Program/Project Manager (PM)	Assigned by the performing business organization of the contractor, to lead the team responsible for completing the program/project and/or contract objectives in accordance with the requirements of the contract. Often this team includes resources from within the Prime contractor but may also include team members from other companies, various subcontractors, consultants, and suppliers.
Control Account Manager (CAM)	A PM subordinate to the Program Manager/overall PM that is delegated the responsibility and authority to control both the work being performed in their assigned area of responsibility as well as the associated budget. Their position is typically at an intersection of the Work Breakdown Structure and the program's organizational structure such that all project-related work performed below their level is managed by them.
Technical Team (TT)	Responsible for the accomplishment of technical program requirements. Examples include but are not limited to the IPT, SEIT and other Technical Team members. • Integrated Product Team (IPT) - Responsible for ensuring program baseline integration and program performance visibility, including providing operational support to the Program Manager and Leadership Team. An IPT Lead may hold a CAM role on the program. • Systems Engineering Integration Technical Team (SEIT) - Primarily responsible for establishing the interconnectivity of all system elements within the Program; and ensuring the system elements function together as a whole, as per the requirements of the SOW/PWS and/or SDD.

Role	Description
Technical Lead (TL)	The Engineering Project Manager's (EPM) and Chief Architect/Engineer's (CA) roles are related. In that, a single person may perform both roles. The EPM generally works with the PM and has overall Engineering and Technology responsibility, and responsibility for adherence to cost/schedule performance and technical responsibility are shared primary goals. The CA role has a generally more advanced and universal technical program focus. The CA is also closely aligned the PM and acts as the primary Engineering and Technology interface with the PIT and the customer for all technical matters and is jointly responsible for the technical leadership and performance for the program.
EVMS Oversight	This team/teams serve in oversight and compliance roles to oversee the company's policies and procedures, software tools and templates, and internal reviews/surveillance of the EVMS.
Finance	Responsible for validation and traceability of a company and program's work authorization process requirements in accordance/alignment with the contractor's EVMS Description.
Program Controls Manager (PCM)	Acts as the primary program coordination control point for the Earned Value Management System Processes - ensuring coordination between the program's internal stakeholders (PM, Contracts, Finance, Subcontracts, SEIT, and CA), the Subcontractors and their requisite stakeholders that support lower tier EVMS, and the customer's Program Office and EVMS stakeholders.
Program Controls Team (PCT)	Works closely with PM, PIT or IPT, SEIT, Engineering Project Manager/Chief Architect/Engineer, and CAMs to prepare, develop, coordinate, integrate, analyze, and maintain integrated plans for budgets and schedules. The team will include personnel with varying titles and experience in schedule management, risk management, program/contract finance, and earned value management and will support proposals and execution activities for projects, programs, and major initiatives at all levels, across functional value streams, to meet program and/or project objectives.

5.4 Seller Roles and Responsibilities Matrix

The Roles and Responsibilities Matrix (RACI) below outlines the Seller roles and responsibilities throughout the contract and project life cycle by contract phase. *Note: There are multiple roles listed under responsible since the team/personnel fulfilling the role will vary based on the size and complexity of the organization.*

Phase 1 - Pre-Award (Seller Activities)[xv]	Responsible	Accountable	Consulted	Informed
Identify Opportunities/Communicate with Government				
• *Attend periodic/annual industry days*	PMT	MGT	MGT, CM/D	PM, MGT
• *Respond to Requests of Information and Sources Sought*	CM/D, PMT	MGT	MGT, EVMS Oversight	PM, MGT
• *Monitor Government Site(s) and Industry publications*	PMT	MGT	MGT	CM/D, PM, MGT

Phase 1 - Pre-Award (Seller Activities)[xv]	Responsible	Accountable	Consulted	Informed
Prepare for Solicitation				
• *Develop Campaign Plan and Capture Strategy*	PMT	MGT	MGT	CM/D, PM, Finance, MGT
• *Define Notional Design*	PM, TT, TL	MGT	TT, TL	MGT
• *Perform a Gap Analysis of Requirements*	TT, TL, PM	MGT	MGT, PM, TT, TL, EVMS Oversight	MGT
• *Identify Resources for Solicitation and Potential Award*	PM, TT, TL	MGT	MGT	MGT

Phase 2 – Solicitation Preparation and Release (Seller Activities)[xvi]	Responsible	Accountable	Consulted	Informed
Monitor and Prepare for Potential Contract Opportunities				
• *Monitor Government Site(s)for Solicitation Related Information*	PMT	MGT	CM/D	PM, MGT
• *Identify Potential teammates*	PMT, PM	MGT	CA/SA, PM	CM/D, MGT
• *Attend Industry Day and Provide Feedback*	PMT, PM	MGT	CM/D, PM, PMT	PM, MGT
• *Review Draft Solicitation Documents and Submit Questions/Comments*	CM/D, PM, PCM	MGT	EVMS Oversight, PCM	MGT, PCT

Phase 3 – Proposal Management (Seller Activities)[xvii]	Responsible	Accountable	Consulted	Informed
Analyze Solicitation and SOW Requirements				
• *Finalize Bid Strategy and Identify Leads/SMEs*	PMT, PM	MGT		MGT
• *Form Final Proposal Team*	PMT, PM	MGT		MGT
• *Determine EVMS Applicability and Subcontractor Flow-Downs*	PM, PMT, PCM, EVMS Oversight	MGT	CA/SA, Finance, PCM, EVMS Oversight	MGT
Prepare and Submit Proposal Documents				
• *Prepare Technical Approach*	PMT, MGT, PM	MGT		TT, TL, PCM
• *Prepare Evidence of Compliant EVMS or Comprehensive Plan for Compliance)*	PMT, MGT, PM	MGT	CA/SA, Finance	
• *Prepare Cost or Pricing Data*	PMT, Finance	MGT		PM

Phase 3 – Proposal Management (Seller Activities)[xvii]	Responsible	Accountable	Consulted	Informed
• *Prepare Program Management Documents*				
○ *Develop Work Breakdown Structure (WBS)*	PM, PCT	MGT	TT, TL	PMT, PCM, CAM
○ *Identify Anticipated Control Account Managers*	PM, PCT	MGT		
○ *Conduct CAM Training (as applicable)*	PCM or EVMS Oversight	MGT	PM, Finance	Finance
○ *Integrated Master Plan (IMP) in accordance Company Procedures and/or CDRL*	PM, CAM, PCT	MGT	TT, TL	PMT, PCM, CAM
○ *Create Proposal CAM Schedules and Integrated Master Schedule (IMS)*	PM, CAM, PCT	MGT	TT, TL, PCM	PMT
○ *Compile Draft Project Plan*	PM, PCT	MGT	TT, TL, CAM, PCM	PMT
○ *Establish Anticipated Contract Budgets, Management Reserves, and Performance Measurement Baseline*	PM, CAM, PCT	MGT	TT, TL, PCM	PMT, MGT
• *Review Proposal for Compliance and Submit*	PMT, CM/D	MGT	PM, CA/SA, PCM, EVMS Oversight	PM, Finance

Phase 4 - Source Selection and Contract Award (Seller Activities)[xviii]	Responsible	Accountable	Consulted	Informed
Review and Comment on Draft Contract Documents	PM, CA/SA, TT, TL	MGT	CM/D, PCM, Finance	MGT
Attend and Present at Pre-Award Integrated Baseline Review (when applicable)	PM, CAM, TT, TL, PCT	MGT	Finance, PCM, EVMS Oversight	MGT
Negotiate Contract	CM/D, PM, Finance	MGT		PCM

Phase 5 - Contract Execution and Administration (Seller Activities)[xix]	Responsible	Accountable	Consulted	Informed
Establish Baseline Project Plan				
• *Refine and Deliver Work Breakdown Structure (WBS) and Dictionary*	PM, PCT	PM	TT, TL	MGT, PCM, CAM, MGT
• *Identify Control Account Managers*	PM, PCT	PM		

Phase 5 - Contract Execution and Administration (Seller Activities)[xix]	Responsible	Accountable	Consulted	Informed
• *Conduct CAM Training*	PCM or EVMS Oversight	PM	Finance	MGT, Finance
• *Create CAM Schedules and Integrated Master Schedule (IMS)*	PM, CAM, PCT	PM	TT, TL	MGT, PCM, CAM
• *Establish Contract Budgets, Management Reserves, and Performance Measurement Baseline*	PM, CAM, PCT	PM	TT, TL, PCM	MGT
• *Perform Risk, Issue, and Opportunity Analysis and Update Risk Log*	PM, PCT	PM	TT, TL, CAM, PCM	MGT
Post Award Orientation and Integrated Baseline Review				
• *Conduct Post Award Orientation Discussions (e.g., Kick-off Meeting, Review Transition-in Plan, etc.) (when applicable)*	PM, CAM, TT, TL, PCT	PM	Finance, PCM, EVMS Oversight	MGT
• *Attend and Present at Post-Award Integrated Baseline Review (when applicable)*	PM, CAM, TT, TL, PCT	PM	Finance, PCM, EVMS Oversight	MGT
Monitor and Analyze Program Performance and Submit Contract Reporting				
• *Monitor and Analyze Program Performance*				
○ *Conduct/Attend Integrated Product Team meetings*	TT, TL	TL		MGT
○ *Analyze Risks, Issues, and Opportunities and Update Risk Log*	TT, TL, PCM, CAM, MS	PM		MGT
○ *Monitor Cost, Schedule, and Technical Performance*	TT, TL, PCM, MS	PM		MGT
○ *Review Cost and Schedule Variances and Conduct Root Cause Analysis*	CAM, TT, TL, PCT	PM	PCM, EVMS Oversight	MGT
○ *Prepare or Update EACs and/or Comprehensive EACs*	PM, CAM	PM	PCM	MGT
○ *Document Variance Narratives with Corrective Actions*	PM, CAM	PM	PCM	MGT
○ *Approve and Submit Contract Reporting*	PM, CAM, PCT	PM	PCM, TT, TL	MGT
○ *Identify Potential Cost or Schedule Overruns and Determine Appropriate Strategies/Actions*	PM, TT, TL, CAM	PM	PCM	MGT
• *Monitor, Obtain, and Issue Funds on Incrementally Funded Contracts*				

Phase 5 - Contract Execution and Administration (Seller Activities)[xix]	Responsible	Accountable	Consulted	Informed
○ *Monitor Funds (including Subcontractor Funds) and Issue Limitation of Funds/Cost Notices*	Finance, CA/SA	CA/SA	PM	MGT
○ *Obtain and Distribute Funding to Ensure Uninterrupted Performance*	Finance, CA/SA	CA/SA	PM	MGT
Conduct and Participate in EVMS and Contractual Compliance Reviews				
• *Perform Periodic Contract Compliance Checks*	PM, CAM, PCT	PM	PCM, EVMS Oversight	MGT
• *Perform Periodic Self-Assessments/Surveillance Reviews*	EVMS Oversight	EVMS Oversight	PM, CAM, PCM, PCT	MGT
• *Provide Inputs for External Compliance Reviews*	PM, CAM, PCM, PCT	EVMS Oversight	MGT	MGT
• *Review Findings Reports and Respond to Reviews/System Determinations*	EVMS Oversight	EVMS Oversight	MGT	MGT
Propose Contract Changes and Obtain Modifications				
• *Propose Scope Changes (as applicable)*	PM, CA/SA	CM/D	PCM, CAM	Finance, MGT
• *Request Equitable Adjustments (as applicable)*				
○ *Prepare and Negotiate Change Order or Equitable Adjustment Proposal*	CA/SA, PM, Finance	CM/D	CAM	MGT
○ *Identify Baseline Changes Resulting from the Change Order or Equitable Adjustment*	CAM	PM		CA/SA, PCM, MGT
• *Propose and Negotiate OTB/OTS (as applicable)*	PM, CA/SA	CM/D	PCM, MS	MGT
• *Review and approve reprogrammed baseline*	PM, TT, TL, CAM	PM	PCM	Finance, MGT
Compile and Submit Baseline Changes (as applicable)	PM, CAM, PCT	PM	CA/SA, PCM, CAM	MGT
Prepare and Submit Periodic Indirect Rate Proposals	Finance	Finance		CA/SA, PM, PCM, MGT

Phase 6 – Contract Closeout or Termination (Seller Activities)[xx]	Responsible	Accountable	Consulted	Informed
Verify Physical Work Completion and Submit Final Reports	PM, PCM	CAM		CA/SA, Finance, MS, MGT
Submit and Process Final Invoices				
• *Prepare Incurred Cost Submissions with Actual Indirect Rates (when applicable)*	PM	Finance		MGT
• *Respond to Reviews/Audits of Indirect Rates (when applicable)*	PM	Finance		MGT
• *Submit and Pay Final Invoices*	PM	Finance		MGT, CA/SA, TT, TL

6 Pre-Award and Award – Project Start-up[xxi]

Pre-award life cycle activities span the period from need recognition through project start-up. From the point of view of the purchasing contract management function (e.g., the government or the prime contractor when preparing subcontracts) they can be sub-divided into several specific tasks or functions which are then controlled by the specific requirements of public law, the controlling regulations, agency policy, and the specific language of the contract. This section breaks down the key phases by life cycle when the contract requires EVMS consideration and starts with early stages of pre-solicitation activities for solicitation preparation, continues through proposal management, source selection, and contract award.

6.1 Phase 1 – Pre-Solicitation (Conduct Acquisition Planning)[xxii]

Acquisition planning is the most critical part of the pre-solicitation process. While the contracting office has an overall responsibility to facilitate the entire acquisition process, it is a team collaborative approach early in the project cycle that forms the framework for planning, organizing, staffing, controlling, and leading a project. The result is a master schedule for activities essential for project success, and for formulating functional strategies and plans. FAR Subpart 7.102 states "*agencies shall perform acquisition planning …. for all acquisitions*." While the scope of the planning and the detail in the Acquisition Plan will vary by agency and with the complexity and value of the acquisition, it is quite reasonable to assume that any project approaching the thresholds associated with imposing EVMS will certainly cross the threshold of cost/risk requiring a detailed written acquisition plan [See FAR 7.103 (e)].

As is true of other contracts, Acquisition Planning for contracts with EVM requirements follows the standard agency and FAR guidance, however; there are a few additional considerations that will need to be considered in the plan as discussed below.

6.1.1 Analyze Program Needs and Identify Acquisition Strategy (Buyer)

Technical requirements for developmental contracts – either as described in FAR Part 34 for Major Systems Acquisitions or with respect to major infrastructure systems such as IT systems can be very detailed. Buyers should ensure their requirements are complete, unambiguous, accurate, and fully address the specific needs of the acquisition. Specific attention should be given to the requirements of FAR 7.105 – Contents of Written Acquisition Plans to ensure complete coverage of required topics including technical, cost, schedule, risk, and a detailed plan of action for conducting the acquisition.

The acquisition strategy selected for contracts with an EVMS requirement parallels the same decision process used for other contracts with the possible exception of the effects of the contract size or complexity. Acquisition teams should follow the general guidelines of FAR 7.105 (b) with the following additional considerations recommended:

<u>Sources</u>: Acquisition planners should consider if the contract should be awarded to a single prime contractor with overall responsibility for the total program or if the prime contractor will have a lesser role such as system engineering, integration, assembly, etc. and rely on systems and components acquired by the Government through separate contracts. The latter approach, often referred to as a 'system of systems' approach is useful in complex major weapons system programs combining 'best of breed' systems and subsystems under the overall direction of a systems engineer and a government program office.

<u>Competition:</u> Competition requirements should be carefully considered in light of the size and complexity of the contract and the potential for a limited number of qualified respondents.

Contract Type. EVMS is traditionally associated with contracts with significant risks – often developmental in nature. These contracts are typically structured as Cost type contracts. As stated at FAR 16.301.2 Contracting officers shall use Cost Reimbursement contracts, when

(1) Circumstances do not allow the agency to define its requirements sufficiently to allow for a fixed-price type contract (see 7.105); or
(2) Uncertainties involved in contract performance do not permit costs to be estimated with sufficient accuracy to use any type of fixed-price contract

Note: the FAR specifies that *if a cost type contract is selected the written acquisition plan must be approved and signed at least one level above the CO*.

FAR Part 16.102(b) allows the Contracting Officer the flexibility to use multiple contract types in the same contract instrument awarded under FAR Part 15 procedures. The common manner of achieving contract type separation is through the use of line items [See FAR 4.1001 (a)] separating the work into segregable sections or tasks such as development and production. The acquisition team should also identify any strategy or milestones whereby the contract type could be transitioned from a cost type contract to fixed price such as following first article test etc.

If EVM is not applicable to the entire contract effort those portions of the contract subject to EVM should be clearly delineated. The work covered by each contract type (e.g., Firm Fixed Price and Cost) must be clearly defined and segregated in the contract structure and the associated work statement. For example, if Commercial items are considered and those items must be modified to meet government requirements then care should be taken to ensure the developmental effort for the modified item (to include testing, logistics, and other requirements) be expressed in such a manner as to not preclude performing EVM on the developmental portion of the effort. If this approach is selected the contract should clearly define and limit the extent to which EVMS is applied by specifying the CLIN(s) or contract phases subject to the requirement.

6.1.2 Identify Management Plan and Draft Solicitation Documents (Buyer)

Particular attention should be given to FAR 7.105(b)(11) which states: *"Discuss, as appropriate, what management system will be used by the Government to monitor the contractor's effort. If an Earned Value Management System is to be used, discuss the methodology the Government will employ to analyze and use the earned value data to assess and monitor contract performance. In addition, discuss how the offeror's/contractor's EVMS will be verified for compliance with the Electronic Industries Alliance Standard 748 (EIA-748), Earned Value Management Systems, and the timing and conduct of integrated baseline reviews (whether prior to or post award)."*

Additionally, the acquisition team should take note of FAR 7.106 Additional Requirements for Major Systems especially if the award is for a follow-on production contract to ensure the government is assured of the ability to competitively acquire spare or replacement parts and components.

6.1.3 Identify Specific Earned Value Management Requirements (Buyer)

Contracting requirements for Earned Value Management arise from the Office of Management and Budget (OMB) Circular A-11 Part 7 which were, in-turn, incorporated into the FAR at Part 34.2. Subsequently, various agencies have expanded or clarified Part 34.2 in their agency-specific supplements such as DFARS 234.2. FAR requirements have also been expanded within various agencies by means of agency-specific guidebooks and policy guidance.

Earned Value requirements are passed down to contractors in a government prime contract via:

- Solicitation provision FAR 52.234-2 which notifies the contractor of the EVM requirement and a pre-award Integrated Baseline Review
- Solicitation provision FAR 52.234-3 which notifies the contractor of the EVM requirement and a post-award Integrated Baseline Review
- Contractual clauses or FAR 52.234-4 which establish the EVM requirement

Some agencies – notably the Department of Defense (but also the Department of Energy, Department of Health and Human Services and NASA) have established clauses that are used in lieu of the basic FAR clauses such as DFARS 252.234-7001 instead of FAR 52.234-2 Notice of Earned Value Management System and DFARS 252.234-7002, Earned Value Management System, instead of FAR 52.234-4, Earned Value Management System.

Contractual guidance especially concerning dollar values controlling when and how these requirements are applied varies somewhat between the FAR and the various agency supplements as shown in EVMS Thresholds by Agency table below.

EVMS Thresholds by Agency

Regulation	Dollar Threshold for EIA-748 Guideline Compliance	Dollar Threshold for EIA-748 Cognizant Federal Agency (CFA)-Reviewed System
FAR Part 34	Agency-Specified	Agency-Specified
DFARS Part 234	$20 Million	$100 Million
HHSARS Part 334	$20 Million	$50 Million
NFS Part 1834	$20 Million	$50 Million

Note: Data current as of the publication date. Refer to the FAR and/or agency supplement for current threshold requirements or unique circumstances controlling how those thresholds are applied. Contractors are responsible for EVMS as specified in their contracts irrespective of the current thresholds.

Applicability of the EVM requirements to a specific contract is controlled by the Procuring Contracting Officer's (PCO) determination that the prescription requirements in the FAR or agency supplement applies to a specific contract.

The application of guidance provided in the FAR to a specific contract action is a matter of professional judgment by the Contracting Officer. In doing so the contracting officer is granted wide latitude by applying the following principles:

- *"An Earned Value Management System (EVMS) is required for major acquisitions for development, in accordance with OMB Circular A-11. The Government may also require an EVMS for other acquisitions, in accordance with agency procedures."* [FAR 34.201 (a)]
- *"No contract shall be entered into unless the contracting officer ensures that all requirements of law, executive orders, regulations, and all other applicable procedures, including clearances and approvals, have been met.* [FAR 1.602-1 (b)]

- *"Contracting officers are responsible for ensuring performance of all necessary actions for effective contracting, ensuring compliance with the terms of the contract, and safeguarding the interests of the United States in its contractual relationships. In order to perform these responsibilities, contracting officers should be allowed wide latitude to exercise business judgment."* (FAR 1.602-2)
- Finally, if the situation is not specifically addressed then *"In exercising initiative, Government members of the Acquisition Team may assume if a specific strategy, practice, policy or procedure is in the best interests of the Government and is not addressed in the FAR, nor prohibited by law (statute or case law), Executive order or other regulation, that the strategy, practice, policy or procedure is a permissible exercise of authority."* [FAR 1.102 (d)]

In practice, the Contracting Officer operates in conjunction and coordination with the Acquisition Team (or Acquisition IPT) and does not make such a decision without advice or input from other team members. Such a decision is typically based on agency guidance, including DOD Instruction 5000.02, NASA/SP-2018-599 or DOE G 413.3-10A, and generally considers the nature of the acquisition, the contract type, the contract value, and the risk(s) inherent in the acquisition effort.

Requiring a Seller use an EVMS carries associated administrative requirements for management and reporting and cost. The benefits derived from that cost should be weighed by the acquisition team against the risk reduction benefits offered by EVMS with due consideration of the above regulatory guidance. If necessary, the acquisition team should consider waiving the requirement for EVMS in those instances where it is clearly does not provide commensurate reductions in program risk when weighed against the cost and administrative complexity of its requirement. Conversely, the acquisition team should also consider requiring an EVMS in acquisitions that may not meet the dollar thresholds established in the regulatory guidance if such a requirement would provide significant benefits to risk reduction or project management efficiency that would offset the additional cost of implementing such a requirement. See DFARS Part 234.201, paragraph (1) (iii) for example.

6.1.4 Identify Opportunities/Communicate with Government (Seller)

As is standard practice, Sellers should identify opportunities through Industry Days, Open Houses, trade shows, or other venues at which the Buyer (government) discusses current or upcoming requirements with industry. Sellers should also monitor and maintain contact with government sources and industry publications to remain aware of government needs and upcoming opportunities.

Where appropriate and ethical the Seller should put forth a statement of their interest and take advantage of government sponsored opportunities for communication. Often, the complexity of major projects makes them subject to EVMS requirements. Maintaining open dialog between Buyer and Seller prior to the release of a formal solicitation – often including a draft SOW circulated for industry comment, is encouraged for the Sellers to take advantage of such opportunities to provide feedback to the government concerning requirements (including EVMS) and to obtain insight into the government's requirements.

6.1.5 Prepare for Solicitation (Seller)

Sellers should begin preparation for responding to a known opportunity at the earliest time possible. If an EVMS requirement is anticipated, the Seller should review their ability to fulfill likely EVMS requirements and evaluate system compliance. When preparing for solicitation, review those areas in the FAR/DFARS that address EVMS requirements. The Program

Management approach is a key aspect of the development of campaign plan and capture strategy leveraging the organization and processes with EVMS resulting in achieving technical requirements, delivering on-time and within plan.

6.2 Phase 2 – Solicitation Preparation and Release[xxiii]

For the acquisition of goods or services, a solicitation is issued by the Buyer. Solicitations are documents that communicate the Buyer's requirements to the Sellers who then submit competitive offers. One type of solicitation is a Request for Proposals (RFP) that results in competitive proposals. The Buyer compares and evaluates different options to select the best available solution and/or value. Acquisitions that have an EVMS requirement mandated by FAR or agency supplement rules must include those provisions in the solicitation.

6.2.1 Determine EVMS Applicability (Buyer)

The decision to impose EVMS requirements on a particular contract action is driven by a Contracting Officer's determination concerning the legal and regulatory requirements balanced against the countering administrative requirements associated with that action. Contracting officers, while guided by the regulatory and policy guidance provided in the FAR and various agency supplements, remain the ultimate authority and use their business judgment and advice from other team members in formulating their decision. This consultation is prescribed in the FAR at 1.602-2, "*Contracting Officers shall* … (*a) Request and consider the advice of specialists in audit, law, engineering, information security, transportation, and other fields, as appropriate."* Recommendations concerning those who should be consulted are provided in the Roles and Responsibilities Section.

The Technical Program Manager and their analysis team should be integral in the decision-making process concerning imposing Earned Value requirements on a particular contract. *"The cost of implementing EVMS is considered part of normal management costs. However, improper implementation and maintenance create an unnecessary financial burden on both the contractor and the government*. … *Typical areas where costs could be mitigated include selection of the proper levels for management and reporting, the requirements for variance analysis, and the implementation of effective surveillance activities.*"[xxiv]

As stated above, Earned Value has an associated cost and whether it should be implemented, or a waiver sought from the appropriate authority, is a business decision to be made by the Contracting Officer in concert with the program management team based on a cost/benefit analysis similar to that described in the DoD PGI 234.201 specific to the contract. This decision should be made prior to the solicitation release.

6.2.2 Prepare Program Management Documents (Buyer)

The Buyer should perform top-level program planning concurrent with the development of the acquisition plan and draft solicitation, as much of the information in these documents will be included in the final solicitation. These documents should include a top-level WBS complying with MIL-STD-881 (current edition) for defense material items or in a similar structure for other agencies.

The Buyer should also create and publish a milestone schedule identifying key dates and events in the acquisition process including the date for the solicitation release, the receipt of proposals, the likely award date, the planned start work date, and key program events. If EVMS is a requirement this milestone schedule should identify those events and dates for EVMS related activities including the Integrated Baseline Review and delivery of key management documents such as the IMS, Contract WBS, etc.

6.2.3 Release Draft Solicitation(s) and Final Solicitation (Buyer)

Buyers must properly notify prospective offerors of their determination and – as applicable - the requirement for an Earned Value Management System on proposed contract actions. This requirement is fulfilled by including the appropriate provisions from the FAR or agency supplement in the solicitation and the appropriate clause(s) in the resultant contract.

In the FAR, these requirements appear at 52.34.203 and consist of the following:

- The provision at FAR 52.234-2, Notice of Earned Value Management System - Pre-Award Integrated Baseline Review
- The provision at FAR 52.234-3, Notice of Earned Value Management System – Post-award Integrated Baseline Review
- The clause at FAR 52.234-4, Earned Value Management System

In the DFARS, the requirements are similar and consist of the following:

- The provision at 252.234-7001, Notice of Earned Value Management System
- The clause at 252.234-7002, Earned Value Management System

6.2.4 Monitor and Prepare for Potential Contract Opportunities (Seller)[xxv]

The Seller will use the time leading up to the release of the solicitation to prepare a sales (capture) strategy to perform preparatory activities including forming a capture/proposal team and gathering basic information from events like the bidder's conference, industry day, or from information publicly available in government releases, websites, or industry publications. The intent is to build a competitive intelligence capability to assist in structuring a responsive and competitive proposal. This listing will be updated throughout the life of the acquisition and the data passed on to the Seller's capture team.

Concurrent with these activities, the Seller will also begin defining their proposed offering and examining the best/most competitive means of executing the solicitation (contract) requirements. This may include such activities as a preliminary design review, make vs. buy determinations for components, and identifying strategic alliances or teaming agreements to provide enhanced capabilities.

Frequently the government will release a draft solicitation for industry feedback. If that is the case, the Seller will conduct a thorough review of all the draft documents noting those areas where they have questions or may wish to seek clarification or changes. This feedback will be provided to the Buyer in writing so as to improve the solicitation.

It is important to note that such communications prior to the actual publication/release of the solicitation are permitted – and generally encouraged. However, once the solicitation is published the rules change. Communications between Buyer and Seller then become much more formal.

6.3 Phase 3 – Proposal Management[xxvi]

For most organizations the steps for proposal creation, submittal and evaluation are defined as a process. This Guide does not intend to override existing processes; the guide intends to point out areas where the presence of an EVMS requirement may require additional attention by the Seller.

6.3.1 Prepare for Proposal Evaluation (Buyer)

Proposal evaluation is an assessment of the proposal and the offeror's ability to perform the prospective contract successfully. An agency shall evaluate competitive proposals and then assess their relative qualities solely on the factors and subfactors specified in the solicitation, in accordance with FAR 15.305.

The Buyer is responsible for identifying and staffing a selection committee who will conduct the proposal evaluation. The specific instructions for evaluation are documented as a part of the written acquisition plan and excerpted in terms of evaluation factors and sub-factors in Section M of the Solicitation.

Sellers who include EVMS requirements in a Solicitation must ensure the evaluation criteria include some consideration of the EVMS requirement. The lack of an EVMS is not a disqualifying factor (see FAR 34.201(b)[1], however the evaluation team may consider other factors such as the adequacy of the proposed EVMS plan provided when the offeror does not have a compliant system.

Proposal evaluation score sheets or reports should include an ability to document the results of the evaluation of offeror's system or proposed plan and any observations or conclusions resulting from that review.

6.3.2 Analyze Solicitation and SOW Requirements (Seller)

One of the first steps recommended by proposal consultants is the Seller conduct a thorough review of the solicitation and make note of each requirement. This process is frequently referred to as a requirements analysis or "shredding" the solicitation. The result is a listing of solicitation requirements that will ultimately be used in the proposal review process to ensure each requirement has been addressed by a corresponding section or paragraph in the proposal.

When EVMS is required, the Seller needs to ensure the applicable requirements for the solicitation (especially the provisions in Section L advising of the intent to require an EVMS) are appropriately noted and responded to in the resulting proposal documents.

6.3.3 Prepare and Submit Proposal Documents (Seller)

Proposal content should address the Solicitation and SOW requirements appropriately. If an EVMS is required, Sellers should ensure the presence of an approved EVMS within their organization and (as needed) any subcontractors to whom they intend to flow down the EVMS requirement. If such a system exists and evidence such as a letter from the Administrative Contracting Officer or the Cognizant Federal Agency, then such documentation will be an essential discussion point within the proposal and a likely required attachment to the Seller's proposal. However, the Seller should also obtain the EVMS business system status as a part of this step to ensure the system approval/acceptance remains current and in-force and that required actions concerning EVMS Surveillance have been accomplished.

6.3.3.1 Compliant Proposals

Sellers must provide a timely, compliant, and responsive proposal to the Buyer's Request for Proposal (RFP) or other solicitation to be considered for a contract award. Sellers should pay particular attention to the requirements of the solicitation in preparing their responses so as to provide the information requested and any supporting documentation to the procuring agency with their solicitation response.

When an EVMS is required the solicitation may require that the contractor "*shall provide documentation that the CFA has determined that the proposed earned value management*

[1] Offerors shall not be eliminated from consideration for contract award because they do not have an EVMS that complies with these standards.

system (EVMS) complies with the EVMS guidelines in Electronic Industries Alliance Standard 748 (EIA-748)" or that they "*submit a written description of the management procedures it will use and maintain in the performance of any resultant contract to comply with the requirements of the Earned Value Management System clause of the contract*."

The exact requirements and details concerning the information required by the Buyer should be clearly specified in the solicitation. Questions concerning the requirements should be addressed in writing to the Buyer using the request for information procedures (or similar) published in the solicitation in sufficient time to allow the Seller to obtain and include these documents with their proposal submittal. Including a compliance to solicitation requirements matrix, and a compliance to IBR readiness matrix in the Sellers proposal.

6.3.3.2 Cost or Pricing Data

The development of cost or pricing data is controlled by the solicitation requirements and the Federal Acquisition Regulation, FAR Sub-Part 15.4, Contract Pricing. The solicitation will contain an appropriate provision such as FAR 52.215-20, Requirements for Certified Cost or Pricing Data and Data Other Than Certified Cost or Pricing Data. The detail of the data submitted, and the required' format are somewhat flexible and a careful reading of the provision (and alternates) is required to assure compliance.

Additionally, the provisions of Truthful Cost or Pricing Data[xxvii] must be considered and the Seller is required to disclose "*all facts that, as of the date of agreement on the price of a contract (or the price of a contract modification) or, if applicable consistent with section 3506(a)(2) of this title, another date agreed upon between the parties, a prudent Buyer or Seller would reasonably expect to affect price negotiations significantly* and may also include *other relevant information regarding the basis for price or cost, including information on labor costs, material costs, and overhead rates*." [xxviii]

When Sellers are required to provide cost or pricing data (be they "certified" or "other than certified") such Costs are most meaningful when presented as a build-up of costs aligned with the WBS and cross-referenced not only to appropriate contract cost objectives or CLINS but also to the appropriate SOW or WBS requirements.

Such an approach provides traceability of proposed costs to the specific contract requirement and supports a totaling of costs aligned with the CLIN structure, the CWBS, or both. Cost data collected in such a manner may also directly support the creation of the Contract Performance Baseline without the need for additional decomposition or effort.

Cost or pricing data should also support the analysis of proposed work for cost realism by directly associating the proposed costs with specific contract requirements. Such data is an essential requirement for effectively negotiating contract award, identifying likely subcontract costs, and establishing a cost baseline from which the effects of subsequent changes or modification may be computed.

6.3.3.3 Program Planning

Irrespective of Solicitation requirements, Sellers are encouraged to consider how data obtained from the EVMS will be integrated into their management approach and how such data will be used to manage both cost and schedule for the resulting contract. Such an analysis, and even a draft program management plan may be required attachments to the Seller's proposal. Even if not required, this analysis can provide the Seller with necessary insights as to what data will be required to fulfill CDRL requirements, determine responsibility for its collection and reporting, and evaluate any impacts to management practices or systems needed to comply with the contract requirements.

This is an essential step for those Sellers who proposed to use a system that has not been determined compliant they must provide a "comprehensive plan" meeting the following requirements [DFARS 252.234-7001(a) (2) (i)] so as to achieve an "acceptable earned value management system":

1. *"Describe the EVMS the offeror intends to use in performance of the contract, and how the proposed EVMS complies with the EVMS guidelines in EIA-748*
2. *Distinguish between the offeror's existing management system and modifications proposed to meet the EVMS guidelines*
3. *Describe the management system and its application in terms of the EVMS guidelines*
4. *Describe the proposed procedure for administration of the EVMS guidelines as applied to subcontractors*
5. *Describe the process the offeror will use to determine subcontractor compliance with EIA-748"*

Additionally, the offeror *"shall provide information and assistance as required by the Contracting Officer to support review of the plan" and … "provide milestones that indicate when the offeror anticipates that the EVMS will be compliant with the guidelines in EIA-748".*

If the Seller intends to subcontract requirements to lower tier contractors or subcontractor, they must … *"identify the subcontractors (or the subcontracted effort if subcontractors have not been selected) to whom the EVMS requirements will apply".*

6.3.3.4 Integration of Data

Contractors may also be required to submit, along with their proposal, draft versions of certain EVMS related artifacts such as a draft CWBS, CWBS Data Dictionary, and/or a proposed (execution) Integrated Master Plan and (execution) IMS. Sellers are encouraged to integrate cost data and other resource requirements with their proposed schedules and to perform cost, schedule, and risk analysis on the resultant product to ensure all contract requirements have been captured and considered as inputs to the overall proposed cost and schedule. Such integration is a necessary prerequisite to any pre or post award Integrated Baseline Review and the presence of such an analysis with an offeror's proposal may – even if not a required submittal – increase the confidence of the selection authority with the Seller's likelihood of successfully executing the proposed work. Evidence of this integration may be found in artifacts such as a resource loaded IMS.

6.4 Phase 4 – Source Selection and Contract Award[xxix]

Source Selection is discussed in the FAR at subpart 15.3. The stated objective of source selection is "to select the proposal that represents best value" – per FAR 15.302. An agency can obtain best value in negotiated acquisitions by using any one or a combination of source selection approaches.

Various source selections techniques are described in FAR 15.1 and span a range of options including Low Price Technically Acceptable through Best Value (trade-off) – per FAR 15.101-1. The objective of source selection is to select the proposal that is most advantageous to the Government price and other factors considered. Per the DoD Earned Value Management Implementation Guide (EVMIG):

"The final stage of source selection shifts to selection of a qualified source and definitization of the contract, followed by the award of the contract. The source selection team should ensure that the correct DFARS clauses are included in the contract. The SOW tasks and the CDRL items from the solicitation are negotiated and also become part of the contract.

The intent of these provisions is to ensure the following:

- *The contractor uses or can implement an EVMS that can demonstrably meet the Guidelines*
- *The contractor notifies the government of changes affecting the EIA-748 Accepted EVMS*
- *The government has access to pertinent records and data associated with the EVMS*
- *The Guidelines are applied to the appropriate subcontracted effort"*

6.4.1 Review and Evaluate Proposals (Buyer)[xxx]

Separate evaluations of the proposal are made based on technical factors and price. The evaluations are made by separate teams. One area of special interest for contracts with an EVMS requirement is the Contractor's proposed schedule and the associated costs for the proposed effort. There should be a strong relationship between the proposed technical approach (i.e., the "work"), the time allotted to perform that work (i.e., the schedule), and the resources or Elements of Cost (EOCs) employed in achieving that effort (i.e., labor hours, materials, other costs). This relationship and supporting data should be documented in an IMS and the data in that product should be reviewed by the evaluation team with respect to realism (is it achievable), reasonableness (is it good value) and risk.

Generally, the evaluation reviews and scores the Seller's technical approach with respect to how well it meets or fulfills the solicitation requirements. Additional consideration may be given to past performance and the inherent technical and performance risks of the proposed approach as well.

The proposal evaluation process should also include an evaluation of the proposed EVMS against the EIA-748 Guidelines. The source selection team should also ensure that the Seller has met the provisions to flow down EVM requirements and WBS development along with EVM implementation in support of an IBR. The Sellers proposed IMS is evaluated for realism and completeness against the SOW.

Attention should be given to the requirements of FAR 7.105 (b) (4), specifically: "*When an EVMS is required [see FAR 34.202 (a)] and a pre-award IBR is contemplated, the acquisition plan must discuss-*

> *(i) How the pre-award IBR will be considered in the source selection decision;*
>
> *(ii) How it will be conducted in the source selection process (see FAR 15.306); and*
>
> *(iii) Whether offerors will be directly compensated for the costs of participating in a pre-award IBR."*

It is standard practice during proposal evaluations for there to be limited exchanges between the Buyer and the Seller (see FAR 15.306). Such communications often take the form of a question-and-answer format. The presence or absence of an EVMS requirement should not materially impact this process other than if the Buyer needs additional information concerning the EVMS status.

Cost or Pricing Data

A review of contractor cost or pricing data is conducted in parallel with the source selection team's technical evaluation. The nature and extent of the cost or pricing review is largely dependent on contract type (fixed price or cost reimbursement), the product or services type (commercial or other than commercial), and the degree to which competition is present in the acquisition. The objective of this review process is to support the Buyer's determination of a fair and reasonable price for the offer.

This review can take the form of a price analysis (generally performed for fixed price contracts and commercial items) or cost analysis (generally reserved for cost reimbursement contracts or non-competitive awards). Sellers will be required to provide supporting data to the Buyer with their proposals to facilitate these analyses. The data could range from instances where the same or similar items have been sold to others and commercial price lists on one end of the spectrum to fully detailed and certified cost or pricing data on the other.

For contracts with an earned value component, the cost and pricing data submitted should align with the IMS and be supportive of the approach documented in the technical proposal. A best practice is to align cost or pricing data with the WBS, the OBS, and the contract deliverables such that it is possible to not only discern the cost build-up for a deliverable item but also to see how those costs will be incurred or collected during execution. This data is generally derived from the (preliminary) IMS – a frequently required proposal submittal for such contracts.

The cost or pricing analysis team reports their conclusions to the source selection team who then include them in their selection decision.

6.4.2 Conduct Down-Selection (per the Acquisition Strategy) (Buyer)[xxxi]

If the solicitation includes the clause 52.215-1 with Alternate 1 the Buyer may elect to limit the number of proposals by establishing a competitive range. This process is not unique to acquisitions where EVMS is required however, if used, this approach adds some additional steps to the source selection process that could have an EVMS component to them.

As provided in FAR 34.202 (a) and 7.105 a pre-award IBR may be conducted in conjunction with the acquisition. If so, the number of offerors that are given an opportunity to participate should be limited to a reasonable number and the pre-award IBR conducted as a part of the "discussions" (i.e., negotiation effort) in that the FAR stipulates that such discussions lead to the submittal of a revised proposal.

The purpose of an IBR is to verify the technical content and the realism of the related performance budgets, resources, and schedules. It should provide a mutual understanding of the inherent risks in offerors'/ contractors' performance plans

Discussions

If the solicitation contemplates the establishment of a competitive range and conducting discussions with those Sellers (offerors) in the competitive range the Contracting Officer must obtain a Final Proposal Revision from those Sellers who are in the competitive range before making an award.

Final Proposal Revision

The contracting officer may request or allow proposal revisions to clarify and document understandings reached during discussions (i.e., negotiations). At the conclusion of discussions, each offeror still in the competitive range shall be given an opportunity to submit a final proposal revision. If a clarification or possible change to the contract requirements changes the cost or effort of their proposal, then a Seller should be allowed to submit a revised (Final) proposal including any adjustments or amendments to their offer arising from those discussions.

6.4.3 Conduct Source Selection and Conduct Due Diligence (Buyer)

The source selection decision is made by the Source Selection Authority (SSA) in consideration of the Seller's technical proposal and the determination of a fair and reasonable price. As stated earlier, this decision may take the form of a low cost technically acceptable decision or may be a more complex trade-off of technical vs. price such that the government attains best value.

The Buyer has the right to make a final selection of offerors with or without discussions. Consequently, the down-select process discussed above may or may not take place. If award without discussions is contemplated, the Buyer must ensure the appropriate alternate to FAR 52.215-1 is used in the contract. Alternate I is used when discussions are contemplated before award.

Source selection is ultimately made by the SSA, who may also be the contracting officer (official) or may be an executive above them in the organizational structure. The SSA is assisted by the Source Selection Committee (SSC) who perform the actual technical evaluation and ranking of the technical proposals. A separate cost analysis team will perform a cost (or price as may be the case) analysis of the proposal (see the Review and Evaluate Proposals Section) and render a report of their findings.

The SSA generally accepts the recommendations of the Source Selection Committee but is not bound to do so. The SSA may use their own judgement, with appropriate consideration of the SSC's recommendations, to select other than the recommended Seller if doing so is (in their opinion) more beneficial to the Buyer (government).

Determination of Responsibility

In accordance with FAR Part 9 the Contracting officer must determine if the Seller (offeror) is responsible. This process is common to all contracts with or without an EVMS requirement.

6.4.4 Prepare Draft Contract Documents (Buyer)[xxxii]

Generally, there is little if any significant difference between the solicitation and the actual contract with the following exceptions:

- Section K (Representations and Certification) is removed from the contract document and filed
- Sections L (Instructions to Offerors) and M (Evaluation Criteria) are no longer required and are removed from the contract document
- The Contract Award Form (page 1 of the contract) is completed and prepared for signature. Completion includes award date and contract value
- Changes requested by the Seller may be made to various contract documents because of discussions

In general, this process is consistent with award made for other contracts and no EVMS specific procedures are envisioned.

6.4.5 Determine if Contractor's EVMS Status/Plan is Acceptable (Buyer)

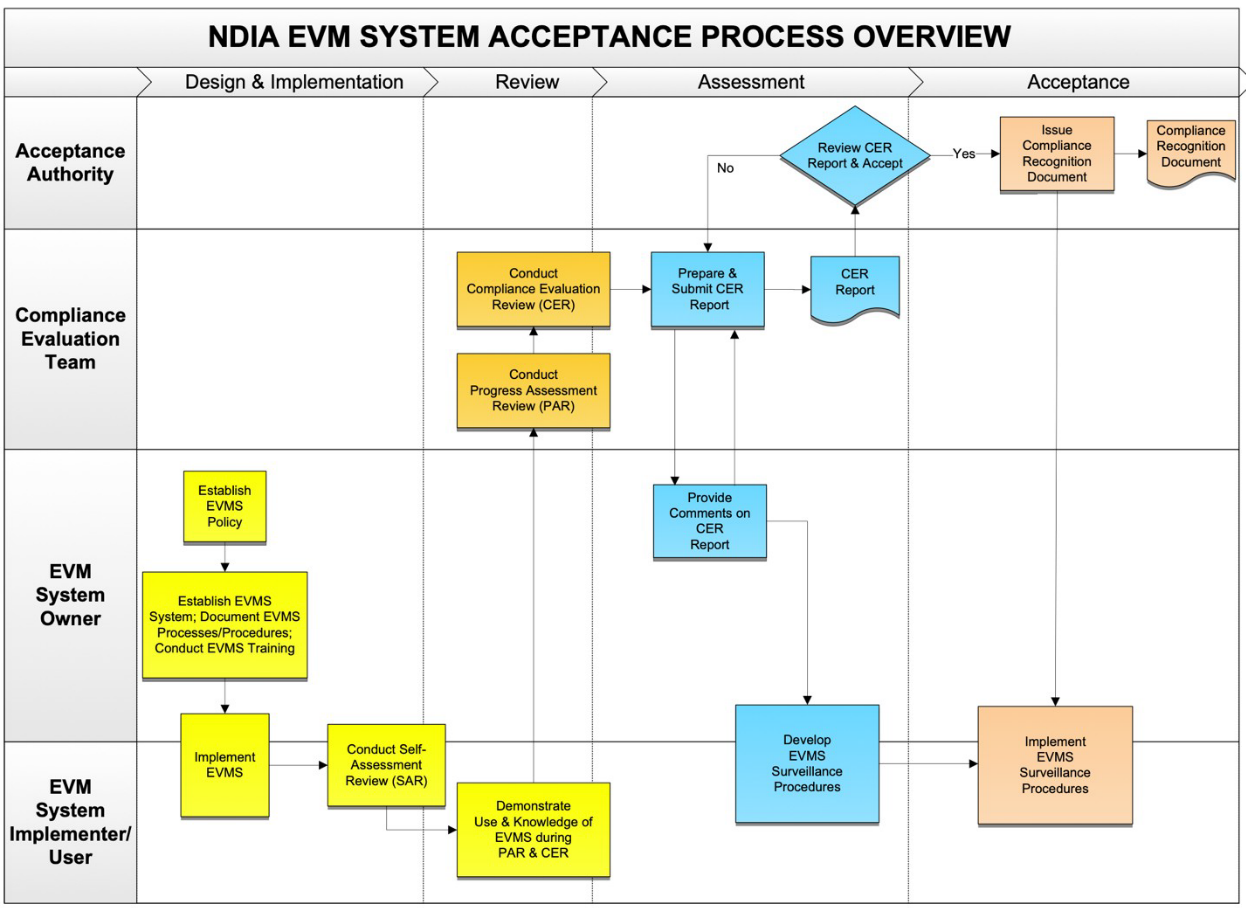
The FAR (at Provision 52.234-2 and 52.234-3) requires that offerors responding to the solicitation *"shall provide documentation that the CFA has determined that the proposed earned value management system (EVMS) complies with the EVMS guidelines in Electronic Industries Alliance Standard 748 (EIA-748)"* i.e., they must have an "Approved" system.

The DFARS requires similar compliance for contracts valued at over $20 Million but offers a less strenuous requirement for contracts below that threshold to "*submit a written description of the management procedures it will use and maintain in the performance of any resultant contract to comply with the requirements of the Earned Value Management System clause of the contract*." i.e., requiring only a "Compliant" system.

6.4.5.1 EVM System Acceptance

The system acceptance process has four phases as illustrated in The EVM System Acceptance Process figure below. More information on EVM system acceptance is in the NDIA IPMD Earned Value Management System Acceptance Guide[xxxiii] (current version). Per the guide, System Acceptance …"*is a formal process that involves the design, implementation, review, demonstration and approval of an Earned Value Management System (EVMS) that is used to manage capital asset projects and meets the intent of the EVMS Guidelines embodied in the EIA-748 Standard for Earned Value Management Systems*." The figure is pulled from the NDIA IPMD System Acceptance Guide[xxxiv], where "The System Acceptance Process involves the System Owner, the System User, the Compliance Evaluation Team, and Acceptance Authority."

The NDIA IPMD EVM System Acceptance Process



The NDIA IPMD System Acceptance Guide[xxxv] provides guidance and a standard framework to prepare a contractor or a government agency (in the case where the EVM requirement is applied to the government work) to successfully demonstrate that the EVMS being used complies with the EIA-748 guidelines and will produce program/project performance data that will contribute to sound capital investment decisions.

6.4.5.2 Level of Compliance

Per FAR Part 34.201, "*An Earned Value Management System (EVMS) is required for major acquisitions for development. The Government may also require an EVMS for other acquisitions, in accordance with agency procedures.*" The FAR further states, "*If the offeror proposes to use a system that has not been determined to be in compliance with the Electronic Industries Alliance Standard 748 (EIA-748), the offeror shall submit a comprehensive plan for compliance with these EVMS standards.*"

The FAR requires compliance with EIA-748 (current version), to qualify an EVMS as an "accepted system", or at a minimum a plan to bring the Seller's EVMS into compliance during the contract performance period. The details of the EVMS implementation timeline, contract milestones, and artifacts are a part of negotiations and award.

EIA-748 Accepted/Compliant EVMS

An accepted/compliant EVMS is one that has been formally reviewed by the Acceptance Authority as compliant with the EIA-748 Guidelines. This acceptance is typically documented by an EVMS compliance recognition document. Acceptance may be documented at a single geographic location or for multiple locations. Multiple accepted systems may also reside within a single geographic location. DCMA is designated as the Department of Defense Executive Agent for EVMS.

6.4.5.3 Responsible Agency for EVMS Compliance

One of the earliest tasks performed in the pre-award time frame is the determination of whether the contractor has a compliant EVMS or how and when a system will be implemented. The adequacy of the contractor's system is important and must be identified prior to contract award in support of contract execution. System compliance can be an Administrative Contracting Officer (ACO) responsibility – especially when the Defense Contract Management Agency is the CFA (see 48 CFR 2.101) for the Contractor or its business unit. DFARS 242.302 Contract Administration Functions specifies "*(S-71) DCMA has responsibility for reviewing earned value management system (EVMS) plans and for verifying initial and continuing contractor compliance with DoD EVMS criteria. The contracting officer shall not retain this function*."

Many agencies accept DCMA EVMS compliance determinations upon award, and agencies may choose to accept non-DoD reviews through established reciprocity Memorandums of Understanding (MOUs). In 2016, NASA and FAA established a reciprocity memorandum[xxxvi]. Additionally, a number of non-DoD agencies use self-validation, peer review validation, or third-party validations using a philosophy expressed by one agency that:

> *"…because the FAR coverage applies throughout the executive branch and to agencies with disparate definitions of and processes and procedures for major systems acquisitions, the FAR Council decided against a "one-size-fits all" approach and left several significant aspects of the detailed implementation up to the discretion of each covered agency."*[xxxvii]

6.4.5.4 Contract Data Requirements List

Contracting officers, in coordination with the other members of the acquisition team shall identify those data items deemed necessary for the efficient management of the contract effort. This requirement should be communicated to the contractor through an appropriate means such as adding the requirement for a Data Item Description (DID) [e.g., DI-MGMT-81861 (Base Document and Revision A), IPMR; DI-MGMT-81861 (Revision B and C), IPMDAR] to the solicitation/contract and providing an appropriate listing of the data items and frequency for submittal required to meet management requirements.

The acquisition team should also consider requirements for a Contract Work Breakdown Structure (CWBS) and the applicable DID [e.g., DI-MGMT-81334 (current version)] and requirements for submitting a draft CWBS with the contractor's proposal including any cross referencing of the CWBS to other program documents.

The Buyer must notify the Seller, concurrent with notifying them of the EVMS requirement, what deliverable items or reports the Seller must provide as Contract Deliverable Data Items and list these items in a form or format prescribed by the agency such as the DD Form 1921, or DD Form 1423-1. This listing should provide information concerning the frequency of reporting, the address to which the report should be submitted, date of first submission, and the Data Item Number which defines the content and format of the submittal. If the Data Item is tailored by the requesting agency a copy of the Data Item description should be included with the solicitation.

6.4.6 Review and Comment on Draft Contract Documents (Seller)

The Seller's response to a proposal containing EVMS requirements is largely the same as the response would be for any other solicitation except for certain EVMS peculiar requirements including:

Attestation of a compliant/approved EVMS. Based on the solicitation requirements and the Seller's management system, the Seller will need to provide either proof their existing system meets the solicitation requirements or produce a plan showing how they will achieve compliance if awarded the contract.

Draft/Preliminary Artifacts. Large or complex contracts likely to require EVMS may include solicitation requirements that preliminary or draft copies on key management documents be provided with the proposal. If this is the case the Seller should comply with the solicitation requirements and provide (consistent with the known requirements, design, and schedule) the requested documents.

Indirect Rate Analysis. If the Seller is not presently subject to EVMS requirements, they may wish to evaluate the likely effects of standing up an EVMS and the revenue likely to be generated by the contract on their present indirect rates and discuss those potential impacts with their ACO.

Earned Value System Validation or Review

Sellers should adequately consider and plan for validation or review of their earned value management system during the pre-award phase. Such planning should include those activities needed to meet the contract requirements of an acceptable earned value management system including (if applicable) DFARS 252.234-7002. These include an EVMS that: "… complies with the EVMS guidelines in the Electronic Industries Alliance Standard 748, Earned Value Management Systems (EIA-748);" and includes management procedures that provide for generation of timely, reliable, and verifiable information for the reports [e.g., IPMR, IPMDAR, or the Contract Performance Report (CPR)] and the IMS required by the contract. The commonly used program reporting DID in DoD is DI-MGMT-81861 (Revision C), IPMDAR.

6.4.7 Conduct Pre-Award Integrated Baseline Review(s) (when applicable) (Buyer)

The need for an IBR before contract award is applicable when there is significant risk. If a pre-award IBR is utilized, pay close attention to "leveling" of resources and reductions to price or cost estimates during down selection in the proposal phase. The pre-award IBR is useful to mitigate the risk in source selection when a contractor has an approach that is relatively high risk.

The IBR can be conducted prior to or following contract award for contracts awarded using the FAR or not later than 180 days following contract award for contracts awarded using the DFARS. The principal difference then being that the FAR allows pre-award IBRs per 52-234-2 whereas the DFARS only allows post award IBRs. (See DFARS 252.234-7002)

Procedures for Integrated baseline reviews are developed by the individual agencies, see the Post Award Orientation and Integrated Baseline Review (IBR) section for more information.

Reference the NDIA IPMD IBR Guide[xxxviii] (Section 2.1) for more information on Pre-Award IBRs.

6.4.8 Attend and Present at Pre-Award Integrated Baseline Review (when applicable) (Seller)

In the case that the Seller has proposed to use a system that has not been determined Upon receipt of Notice of Earned Value Management System, Pre-award Integrated Baseline Review (FAR 52.234-2) the Seller shall attend and present EVMS process in compliant with EVMS guidelines in EIA-748 (current version). If it is determined that the EVMS is not in compliance with EVMS guidelines in EIA-748 (current version), the Seller would present their comprehensive plan for compliance with the EVMS guidelines. For the Seller a pre-award IBR is it not expected to have a fully detail planned PMB as part of IBR, however it is reasonable to expect the proposal and planning documents would be considered IBR artifacts reviewed.

6.4.9 Negotiate and Award Contract (Buyer)[xxxix]

Although the Buyer and Seller may (or may not) have exchanged information during the discussions phase, the Buyer may make one last attempt to obtain a better price or more favorable terms through negotiations. If so, the proposal (or final proposal when discussions are held) may be the subject of bargaining by either or both parties prior to the actual award of the contract.

Through negotiations and award of contract both Buyer and Seller seek to reach mutual agreement on EVM flow-down and Data Item Description (DID) requirements. While the EVMS Guidelines are not subject to negotiation, negotiations should be the timing specified in the (DID) which specifies delivery timing, level of reporting. This requirement may be tailored through contract negotiations to allow for a submission that the Seller and Buyer agree will yield more accurate performance data.

No contract shall be entered into unless the contracting officer ensures that all requirements of law, executive orders, regulations, and all other applicable procedures, including clearances and approvals, have been met. (FAR 1.602-1). The contracting officer's signing of a contract constitutes a determination that the prospective contractor is responsible with respect to that contract. (FAR 9.105-2).

6.4.9.1 Source Selection Decision

The source selection board should make their recommendation as to the successful offeror to the source selection authority (SSA). The SSA shall consider the recommendations of the source selection board in making their decision but are not bound by that decision. The SSA will make the final decision concerning contract award and shall document their rationale in an appropriate determination and finding. This is common practice to all source selections irrespective of EVMS requirements. The only potential difference has to do with the dollar value of the award creating a requirement for a specific office or authority be named the SSA. This could be the case for contracts large enough to be subject to EVMS.

6.4.9.2 Letter Contracts and Undefinitized Contract Actions

In some instances, the Buyer does not have sufficient information to authoritatively state every contract requirement and the cost(s) or schedule associated with them. To allow contract work to commence, the Buyer may elect to issue a letter type contract [a type of Undefinitized Contract Action (UCA)], that authorizes certain work to progress subject to a funds limit to permit the Seller to develop (at contract expense) those plans, designs, details, or other data that will allow the definitizing of the contract requirements and cost. After the Authorization to Proceed (ATP) is received from the Buyer (PCO), the Seller's estimate for the cost of the work is included in the CBB as AUW. Once those details have been defined, the Seller may then submit a proposal for the now definitized work and the contract can be finalized. FAR 16.603

6.4.10 Negotiate Contract (Seller)

The Sellers are permitted, and may be required, to submit a final proposal revision incorporating everything mutually agreed upon during negotiations. This includes updated certified cost or pricing data that includes the following:

- The Seller and Buyer engage in fact findings and negotiate an agreed upon contract price based on the most current, complete, and accurate data. The Seller provides all reasonably available facts that a prudent buyer would reasonably expect to significantly affect the negotiated price.
- As additional pricing information becomes available, the Seller provides it to the Buyer. A best practice is using a Price Negotiation Memorandum (PNM) to list all data presented and the extent to which it was relied upon to establish a fair and reasonable price.
- The Seller conducts a sweep to ensure truthful cost or pricing data and submits the Certificate of Current Cost or Pricing Data (no later than five business days after the date of price agreement).

7 Post Award – Execution and Closeout[xl]

General Contract Management principles identified in the CMS™ and/or the agency regulations apply to contracts with or without an EVMS. Some primary differences between general contract management and contract management with an EVMS include the following:

- The need to ensure an acceptable EVMS is in place and maintained by the contractor (including their lower tier subcontractors as required).
- Understanding the special requirements under EVMS, where authorized work scope is broken down by WBS, traceable to government requirements and the contract, captured in EVMS reporting, and changes are controlled and traceable to contract changes.
- Learning to use the EVMS data to make informed contract management decisions.

7.1 Phase 5 – Contract Execution and Administration[xli]

Once a successful offeror is identified the acquisition moves to the final life cycle phase (i.e., Post-Award). This phase consists of a transitional effort whereby the Buyer performs various due diligence efforts such as determining the offeror meets various award criteria.

The Buyer frequently splits the responsibility for managing the Seller into “technical”, “administrative”, and “business” related categories. Little - if any - practical differences exist between a contract with an EVMS requirement and one that does not have an EVMS requirement outside those areas that deal specifically with the Seller’s responsibility to maintain an approved EVMS and the enhanced management capabilities provided both the Buyer and Seller by virtue of the EVM data.

During the contract execution phase of the contract life cycle, the Seller performs those actions needed to fulfill their contractual responsibility to the Buyer including production and delivery of various contract deliverable items.

7.1.1 Post Award Orientation and Integrated Baseline Review (Buyer)

The FAR at section 42.500 requires a Post-Award Orientation. In common usage the “Orientation” is often called a “start of work meeting”, “pre-con meeting”, or “kick-off meeting”. The FAR describes it as, ”*a post award orientation aids both Government and contractor personnel to (1) achieve a clear and mutual understanding of all contract requirements, and (2) identify and resolve potential problems. However, it is not a substitute for the Contractor fully understanding the work requirements at the time offers are submitted, nor is it to be used to alter the final agreement arrived at in any negotiations leading to contract award*.”

7.1.1.1 Post Award Orientation

The post award orientation is generally accomplished promptly after the contract award and consists of presentations and discussions that outline the Seller’s responsibilities and provide pertinent information helpful to the Seller with respect to small business participation and subcontracting opportunities.

Per FAR 42.503-3, “*The chairperson shall prepare and sign a report of the post award conference. The report shall cover all items discussed, including areas requiring resolution, controversial matters, the names of the participants assigned responsibility for further actions, and the due dates for the actions. The chairperson shall furnish copies of the report to the contracting office, the contract administration office, the contractor, and others who require the information.”*

7.1.1.2 Integrated Baseline Review

An IBR is required by OMB Circular A-11 and should be conducted after contract award [no later than 6 months (i.e., 180 days)] and upon significant changes or events during contract performance such as the exercise of major options or major changes to the contract.

An IBR is a formal review conducted jointly by the Contractor and the Government with the objective *“to jointly assess technical areas, such as the Contractor's planning, to ensure complete coverage of the contract requirements, logical scheduling of the work activities, adequate resources, methodologies for earned value [budgeted cost for work performed (BCWP)], and identification of inherent risks.” (FAR 52.234-2).*

Procedures for Integrated baseline reviews are developed by the individual agencies but generally follow the guidance contained in the FAR at Sub-Part 34.202 Integrated Baseline Reviews, which at 34.202 (b) states:

> *“(b) The purpose of the IBR is to verify the technical content and the realism of the related performance budgets, resources, and schedules. It should provide a mutual understanding of the inherent risks in offerors’/ contractors’ performance plans and the underlying management control systems, and it should formulate a plan to handle these risks.*
> *(c) The IBR is a joint assessment by the offeror or contractor, and the Government, of the-*
> *(1) Ability of the project’s technical plan to achieve the objectives of the scope of work;*
> *(2) Adequacy of the time allocated for performing the defined tasks to successfully achieve the project schedule objectives;*
> *(3) Ability of the Performance Measurement Baseline (PMB) to successfully execute the project and attain cost objectives, recognizing the relationship between budget resources, funding, schedule, and scope of work;*
> *(4) Availability of personnel, facilities, and equipment when required, to perform the defined tasks needed to execute the program successfully; and*
> *(5) The degree to which the management process provides effective and integrated technical/schedule/cost planning and baseline control.”*

Preparation for the IBR should be included in the Seller’s pre-award activities such that IBR data requirements are identified, and management procedures reviewed such that the Seller will be able to transition from pre-award to award. It should be noted that the IBR is not a one-time event or single-point review. It is an interactive and continuous process.

The IBR is a tool that should be used as necessary throughout the life of the contract. Benefits of the IBR are:

- Laying a solid foundation for mutual understanding of project risks
- Customer insight into the contractor’s planning assumptions and the resource constraints built within the baseline
- Ensuring that the Buyer’s PMO budget can support the funding needs of the contractor’s PMB
- Comparing expectations of PMs and addressing differences before problems arise
- Correction of baseline planning errors and omissions
- In-depth understanding of developing variances and improved early warning of significant variances

- Targeting of resources to address challenges and mitigate risks
- Mutual commitment by the joint team to manage to the baseline
- Verifying that technical performance goals or functional exit criteria are clearly defined, agreed upon, and documented
- Ensuring meaningful and reliable performance measurement techniques are employed.
- Understanding of Contractor's Agile processes if utilized by vendor
- Understanding of Contractor's relationships and management of subcontractors, vendors, and interagency agreements to include conducting subcontractor IBRs
- Understanding of the risk associated with integration of all deliverables post-award IBR

7.1.2 Review and Monitor Contract Reporting (Buyer)

One of the benefits of using an EVMS is the wealth of data it provides concerning the overall health of the program. Consequently, it behooves the contract management team to understand what such data represents and how to effectively make management decisions based upon such data.

The Seller is required by the contract data requirements to submit data on a recurring basis in accordance with the contract-specified format (e.g., DID). The commonly used program reporting DID in DoD is DI-MGMT-81861 (Revision C), IPMDAR. Existing contracts or contracts issued by other than DoD may use older editions or agency specific formats/requirements.

The Buyer should monitor the reporting of these data requirements and perform an independent assessment of the conclusions reached or reported by the Seller. This is especially true of the Performance Narrative Report and ensuring the narrative is adequately supported by and reflects the underlying performance data.

7.1.2.1 Monitor Contractor Performance (Buyer)[xlii]

Once performance standards are established and understood, performance should be continuously monitored and provided to the Buyer on a reoccurring basis or when a "quantifiable deviation, departure, or divergence away from a known baseline or expected value" is discovered.

Contractor performance is typically monitored and reported in the CPARS by the COR and the technical team. This is a common contract management function and includes such things as quality assurance, deliverable acceptance, etc. With respect to EVM the performance evaluation in relation to the contract requirements and objectives is more detailed and includes:

- A review of variances in cost or schedule performance to monitor program performance
- A review of the EAC, VAC, and contractor explanations given. Predictive analysis may be utilized to help determine realism and achievability of the EAC, using TPCI and IEAC analysis, as described in the Earned Value Management Fundamentals section.
- A review and/or adjustment to payment of performance incentives based on the reported EVMS data

The Buyer's PMO and contract management teams must be well trained and literate in EVM data analysis and interpretation. The management team should be attentive to key metrics such as SV and SPI; CV and CPI; EAC; and VAC. The Earned Value Management Fundamentals section) identifies the methods for computing these variances and indices. The Buyer and Seller PMOs establish monthly and completion variance thresholds based on mutually agreed-upon percentage and/or dollar amounts. The thresholds are established at the CA level and are typically captured in the contractually driven and approved program management deliverables. The variance thresholds are established to manage potential program concerns by exception.

Many programs begin with the idea of utilizing a 10% threshold to manage program exceptions in accordance with the Office of Management and Budget (OMB) Circular A-11, Part 7 requirements for investments and their acquisitions, "*Agencies are expected to achieve at the completion of the contract at least 90 percent of the cost, schedule, and performance goals established at time of contract award*". However, variance thresholds should be established to support the PMO's desired review-level (i.e., the thresholds should reflect the PMO's risk tolerance). Of note, thresholds are not static and may be adjusted throughout the life of the program.

Recognition of a significant, projected cost variances or the changes to scheduled milestones may indicate a need for formal reprogramming. The overarching factor would be an assessment and determination that the current PMB is no longer informative (i.e., does not reflect planned resources and time frames) and/or is no longer achievable (i.e., additional time and/or resources are needed to achieve the work scope). The Buyer's PMO may hold an IBR to formally review reprogramming and should process the appropriate contract actions to direct the change(s).

If future activities no longer reflect the planned execution and/or variances are no longer providing valuable input for decision making, the Seller's PMO may consider formal reprogramming in the form an approved, Single Point Adjustment (SPA). The program would set the baseline plan equal to actual costs and replan future activities within one or more CAs. If the variance data suggests the project (contract) is behind schedule and cannot recover or significantly overrunning cost, they may consider obtaining approval and a contract modification for an Over Target Schedule/Over Target Baseline (OTS/OTB). An OTS is an approved schedule that is time-phased beyond the original contract completion date, and an OTB is an approved overrun beyond the original contract budget for the awarded scope. For additional information, refer to the DoD Over Target Baseline (OTB) And Over Target Schedule (OTS) Guide (current version).

Analysis and comparison of the TCPI to the cumulative CPI and a formal Estimate to Complete may be utilized to assess the likelihood for project success and or the need for re-baselining or reprogramming. Refer to the Earned Value Fundamentals Section and the NDIA IPMD's Guide to Managing Programs Using Predictive Measures[xliii] to understand key metrics and EAC/BAC realism analysis.

7.1.2.2 Monitor and Issue Funds on Incrementally Funded Contracts (Buyer)

With respect to incrementally funded contracts the Buyer has the inherent responsibility to provide adequate funding to allow the Seller (contractor) to perform the work authorized by the contract with minimal disruptions or stoppages. However, meeting this implied duty is contingent upon the prompt and proper notification from the Seller to the Buyer of the need for additional funding or an increase in contract value.

The Limitation of Funds (FAR 52.232-22) and the Limitation of Cost (FAR 52.232-20) clauses require a notification to the Government when the estimated contract costs will exceed 75% in the next 60 days. These advance notices are supported by the EVMS performance data and facilitate the Buyer's administrative action to obligate additional funds and provide an appropriate contract modification. Timely notifications and updates can prevent material shortages, stop work, and avoid schedule disruptions.

Many contracts with an EVM requirement are incrementally funded, which does add an additional set of management actions that need to be performed. Different award contracts (i.e., CPAF, CPIF, FPI) require final adjustments of the fee provided to the Contractor at contract completion. A monetary award or incentive is earned based on meeting certain performance metrics. The evaluation of performance is based on a predetermined, objective criteria. The aim of award fee contracting is to motivate Contractors to enhance performance in specific technical, schedule, and cost areas. One complexity of incentive contracting is contract over/under runs. For instance, contract underruns which are commonly referred to as positive VACs represent an excess of budgeted resources versus exhausted resources. In this situation the contractual SOW is completed for less than the budget and/or funded amount. Contractors can receive a proportional share of the underrun depending on the contract type as outlined below:

- FPI contract provides an incentive where the Contractor's award fee is increased by a predetermined share of an early or on time completion.
- CPAF contract consists of (1) a fixed base amount and (2) an award amount based upon an evaluation by the Government.
- CPIF contract fee consists of a formula which is adjusted based on the relationship of total allowable costs to target costs. The provision for increasing or decreasing the fee, depends upon allowable costs of contract performance and is designed as an incentive to the Contractor to increase the efficiency of performance.

Contract overruns can lead to fee decrements (i.e., claw backs), a situation where Contractors must return or decrement incentivized funds due to poor performance that may be identified later in contract execution. Claw backs can lead to adverse financial impact on business revenue. It should be noted that FFP contracts provide the maximum incentives for Contractors to execute efficiently and control costs as the price is "fixed" and not subject to any adjustments. The risk under a fixed price contract is on the Seller to manage the contract efficiently, and in this situation Integrated Program Management (IPM) may be used as a tool for the Seller to gain visibility into cost and schedule performance.

7.1.3 Review EVMS and Contractual Compliance (Buyer)

Not only must a Seller have – or be required to implement an approved EVMS to qualify for the award of a contract where an EVMS is required, the Seller must also undertake those actions necessary to ensure their EVMS, once approved, remains compliant with the contractual and EIA-748 requirements.

Contracts (and subcontractors) subject to EVMS require additional administrative effort. Depending on the presence and/or maturity of a Contractor's EVMS at contract award, the Contractor may need to take additional action to initiate or enhance their existing capabilities. Likely scenarios include:

- The Contractor has an EVMS, but that system has not been determined by the Cognizant Federal Agency (CFA) to be compliant with the guidelines in EIA-748 and the system may be CFA-reviewed during the contract
- The Contractor does not have an EVMS in place and needs to implement and demonstrate compliance during the award – the system may be CFA-reviewed during the contract

The CFA is defined as the agency with the largest number of negotiated contracts including options. If the cognizant agency is the DoD, the DCMA performs the necessary administrative duties on their behalf. For educational institutions (defined as institutions of higher education in the OMB Uniform Guidance at 2 CFR part 200, subpart A, and 20 U .S.C. 1001) and nonprofit organizations (as defined in the OMB Uniform Guidance at 2 CFR part 200), the cognizant Federal agency for indirect costs is established according to the OMB Uniform Guidance at 2 CFR part 200, appendices III and IV, respectively. The Department of the Interior is the cognizant agency for all Indian tribal governments. The HHS serves as the main cognizant agency for hospitals. *(See FAR 42.003)*

In the case of the first scenario the contract administration function for the CFA simply needs to continue their existing oversight. Per FAR 52.234-4 (f) *"The Contractor shall provide access to all pertinent records and data requested by the Contracting Officer or an authorized representative as necessary to permit Government surveillance to ensure that the EVMS conforms, and continues to conform, with the performance criteria …"* in EIA-748.

In the other scenarios the CFA contract administration function must additionally:

- Review and approve a Seller's plan to initiate or improve their existing cost/schedule management system to achieve compliance with EIA-748.
- Provide oversight to ensure the Contractor is applying their existing management controls or EVM system to the contract while progressing towards EIA-748 compliance.
- Ensuring the contractor makes satisfactory progress towards achieving the necessary milestones in their plan.

The primary objectives of a DCMA EVMS Compliance or Surveillance Review is to make sure a contractor is effectively using an internal cost and schedule management control systems. The Government relies on accurate, valid, reliable, timely, and auditable data.

Reviews are performed every 2 to 4 years but no more than on an annual basis. Adequate systems should:

- Provide valid and timely management information
- Comply with the government EVMS guidelines
- Provide timely indications of actual or potential problems.
- Provide baseline integrity

The audit scope and testing performed is dependent upon a tailored risk assessment. However, most reviews include:

- Reviewing company policies and procedures for compliance with EVMS guidelines and contract provisions
- Performing periodic reviews of select financial data including budgeting, direct and indirect costs, variance analysis, and forecasting
- Reviewing EACs, reconciliations, risk and opportunity factors and variance analysis
- Performing verifications of system integrity
- Proposing corrective action in regard to cost, schedule, technical, and other problem areas

The CFA Contract Administration function will also review the Contractor's EVMS initially and periodically to determine if the system meets the EIA-748 or other contractual requirements. When a system has been reviewed and deemed to meet requirements, the CFA Contract Administration function shall provide written notification to the Contractor indicating their system has been deemed compliant.

The CFA Contract Administration function also has the responsibility to periodically review the Contractor's EVMS as a part of their surveillance effort and identify any aspect of their system that fails to meet the requirements and ensure proper and timely efforts are undertaken by the contractor to remediate such findings (See respective agency regulations for EVMS contract implementation thresholds).

7.1.4 Review Proposed Contract Changes and Process Modifications (Buyer)

An all-inclusive EVM plan is needed to effectively plan, oversee, and execute the work. On a recurring basis, review changes to the SOW at the WBS level and ensure that all negotiated contract work (including both prime and subcontract work) reconciles to the EVM plan and issue contract modifications as needed. If contract changes and/or process modifications become necessary, PMs must follow the agreed upon procedures for updating the EVM plan after obtaining the necessary approvals.

7.1.5 Analyze and Accept/Reject Periodic Forward Pricing Rate Proposals (when applicable) (Buyer)

When dealing with cost reimbursement type contracts (e.g., CPFF, etc.) it is important to note that the Seller's indirect cost is a significant component of the total program cost. The Seller's indirect rates are based on estimated indirect costs for the Fiscal Year (FY). Periodically these rates should be reviewed and adjusted to reflect actual costs and reviewed by both Buyer and Seller. A Forward Pricing Rate Proposal (FPRP) contains the Seller's certified, anticipated indirect costs and rates for a specified period of time. The Buyer is responsible for reviewing the proposal and ensuring that the proposed amounts are fair and reasonable. This is usually accomplished by performing an FPRP review. When the Seller and Buyer successfully negotiate the indirect rates, the two can enter into a Forward Pricing Rate Agreement (FPRA) or if negotiations are not reached the CFA can issue a Forward Pricing Rate Recommendation (FPRR).

Provisional Billing Rates (PBR) are temporary indirect rates used for interim billings until a settlement is reached on the final indirect costs rates for the Seller's fiscal year. The Buyer should monitor the Seller's actual costs and ensure that the PBRs are reasonable throughout the Buyer's fiscal year. As a best practice, Sellers may voluntarily submit a billing rate proposal. Refer to FAR 42.704, for Billing Rates procedures and guidance for establishing PBRs.

7.1.6 Establish Baseline Project Plan (Seller)

It is imperative that the baseline is adequately established as it is what contract performance is measured against. The Seller should reconcile the proposed bid to the negotiated contract and communicate the negotiated position to the program execution team. Sellers should be cognizant of the Buyer's requirement to conduct a pre- or post-award IBR and should prepare for a Buyer's review. The Buyer's review will include the following per DoD's The Program Managers' Guide to the Integrated Baseline Review Process (current version):

- Technical scope of work is fully documented at the appropriate level of detail and is consistent with authorizing documents
- Key project schedule milestones are identified and supporting schedules reflect a logical flow to accomplish the work
- Resources (budgets, facilities, infrastructure, personnel, skills, etc.) are available and are adequate for the assigned tasks
- Tasks are planned and can be measured objectively relative to the technical progress.
- Rationales underlying the PMB are reasonable
- Management processes support successful execution of the project

The contract-required reports may include:

- Explanations for cost, schedule and at complete variances that tripped established thresholds

- Root cause analysis explaining the variance drivers and abnormalities creating variances.
- A task/project impact analysis explaining the impact to the CA, WBS, and/or overall project
- A corrective action plan (CAP) providing the recovery and risk mitigation plan. In instances of underperformance, the CAP identifies project errors, reasons for their occurrences, and their associated drawbacks; lists time-phased steps to achieve targeted outcomes; and provides metrics for measuring and monitoring progress

The Seller (PM) should tailor the customer required reporting to provide the minimum data necessary for effective management control.

7.1.7 Post Award Orientation and Integrated Baseline Review (IBR) (Seller)

Within 180 days or sooner after contract definitization, or in accordance with contract terms, conduct an IBR to ensure all work scope is accounted for, the cost, schedule and technical plan is integrated, risks and opportunities are identified, and risk mitigation/opportunity response plans are put in place.

7.1.8 Monitor and Analyze Program Performance and Submit Contract Reporting (Seller)

Once the baseline plan is established, performance is measured against that plan and management decisions are made concerning corrective actions. The Seller has to use their approved EVMS to provide the Buyer the most likely cost, schedule, and technical position on the contract.

7.1.8.1 Monitor and Analyze Program Performance (Seller)

The Seller should document if the project is on schedule and on budget. If a comparative analysis of the expected performance vs. the actual completed work reveals variances, the Seller should communicate this to the Buyer. Variances are typically communicated via monthly efficiency and cost and schedule performance reports and Corrective Action Plans (CAPs).

The Seller should conduct internal reviews and attend Buyer PMO meetings at the intervals specified in the contract. This is an opportunity for the Seller to report program progress, discuss any issues seen on the contract, and define any needed items/actions from the Buyer/Seller to ensure timely execution of the work. The Seller will perform the following items throughout contract performance and prior to meetings with the Buyer PMO:

- Analyze risks, issues, and opportunities and update the risk and opportunity log
- Monitor cost, schedule, and technical performance
- Review cost, schedule and at complete variance narratives with corrective actions
- Prepare or update EACs and/or Comprehensive EACs, at a minimum, annually
- Document variance narratives with Corrective Actions
- Approve and submit contract reporting. This will consist of all CDRLs specified on the contract, typically using the IPMR or IPMDAR reporting formats
- Utilize EVM predictive metrics to identify potential cost or schedule overrun and determine appropriate strategies and actions to mitigate impacts

7.1.8.2 Monitor, Obtain, and Issue Funds on Incrementally Funded Contracts (Seller)

Managing contract funds is an essential responsibility of the contract manager, and financial management of the contract is equally important to managing the technical detail. Many contracts requiring EVMS are of the cost reimbursement type (generally as a result of contract risk) and are frequently incrementally funded and contain Contract Clauses 52.232-20, Limitation of Cost; 52.232-22, Limitation of Funds; or their agency specific analogs. These clauses require the Seller to provide the Buyer with advance notice that a spending threshold is approaching and provides opportunities for the Buyer to elect to either provide additional funds, increase the contract value, or exercise their rights to terminate or modify the contract.

The Seller's Contract Manager (or often a Project Controller in larger organizations) typically perform the following efforts to keep track of contract funds and ensure the work can continue uninterrupted:

- Establishing appropriate account codes and job numbers
- Establishing and loading budgets
- Monitoring contract funding levels
- Tracking expenditures versus the budget and funding limits
- Reporting status, including:
  - Periodic (usually monthly) status reports,
  - Limitation of cost status, and
  - Limitation of funds status
- Requesting additional funds
- Issuing "stop work" notices, as appropriate

The Seller usually creates a resource-loaded, time-phased plan which is frequently the basis for contract funds management as it supports creation of the time-phased budget.

Additionally, the Seller is required to submit periodic reports as called out in their Contract Data Requirements List (CDRLs) or other contract sections. These reports provide information "to date" but will need to be enhanced to project expected expenditures (and purchase order commitments) for the upcoming months to ascertain when the existing level of funding is likely to run out and then count backwards from that date to determine when the appropriate Limitation of Funds/Cost notice is required. This process is often facilitated by a continuously (or periodically) computed "Funds Thru" date expressing when the allocated funding will be consumed.

7.1.8.2.1 Limitation of Funds Notice

The Buyer (Contracting Officer) shall insert the FAR 52.232-22, Limitation of Funds clause in incrementally funded cost-reimbursement contracts and solicitations. The FAR Clause at 52.232-22 provides:

> *"The Contractor shall notify the Contracting Officer in writing whenever it has reason to believe that the costs it expects to incur under this contract in the next 60 days, when added to all costs previously incurred, will exceed 75 percent of the total amount so far allotted to the contract by the Government …. The notice shall state the estimated amount of additional funds required to continue performance for the period specified in the Schedule."*

7.1.8.2.2 Limitation of Cost Notice

The Buyer (CO) shall insert the FAR 52.232-20, Limitation of Cost clause in fully funded cost-reimbursement contracts and solicitations. The FAR Clause at 52.232-20 provides:

> *"The Contractor shall notify the Contracting Officer in writing whenever it has reason to believe that the costs it expects to incur under this contract in the next 60 days, when added to all costs previously incurred, will exceed 75 percent of estimated cost specified in the Schedule or the total cost, will be either greater or substantially less than the previous estimate···the notification shall provide the Contracting Officer a revised estimate of the total cost of performing this contract."*

Buyers should evaluate additional funding requests (e.g., a potential overrun of the contract value) with the project team to determine if the products or services being acquired by the contract action are still necessary, if contract performance (cost and schedule) is satisfactory, and if it is in the Buyer's interest to grant the request.

7.1.9 Conduct and Participate in EVMS and Contractual Compliance Reviews (Seller)

Sellers should perform annual self-assessment checks, commonly referred to as surveillance and internal reviews. Per the NDIA IPMD Surveillance Guide[xliv], surveillance is the continuous process of reviewing the health of the EVMS and are performed with the following primary goals:

- Verify that the organization's EVMS has been effectively implemented in accordance with the organization's EVMS documentation.
- Verify the EVMS provides timely, accurate, and reliable integrated project management information for internal and customer use.
- Verify the project's commitment and ability to maintain and use its EVMS as an integral part of its project management process.
- Effectively communicate surveillance findings, results, and opportunities for improvement to appropriate stakeholders and follow up to correct systemic problems and leverage best practices.

Self-assessments/surveillance generally starts once the PMB is established on a newly authorized project and extend through the duration of the project. Surveillance reviews should not be confused with a formal Compliance Evaluation Review (CER), which includes the unique goal of ensuring the EVMS complies with the intent of the EIA-748, EVMS guidelines. Self-assessments do not replace the CFA's requirement to conduct Surveillance Reviews of a contractor's EVMS. System Reviews should also not be confused with an IBR.

Additional Reviews and Audits[xlv]

Cost reimbursement contracts are subject to audit; therefore, all costs claimed must be adequately supported by accounting records and other auditable data. The Government performs the following examinations:

- ICP – The Buyer assess the accuracy of the Seller's annual costs and determines whether the costs are allowable, reasonable, and allocable to the contract in accordance with contract terms, cost accounting standards, and government laws or regulations.

- SF 1034 Public Voucher Reviews – The Buyer verifies that the voucher is accurately prepared (i.e., mathematically accurate and contains cumulative amounts).
- Government Property Audits – If the Government has furnished property or equipment to the Seller, then it audits the Sellers property (or material) control system and disposition the inventory of residual material or equipment.

7.1.10 Propose Contract Changes and Obtain Modifications (Seller)

When the Seller and Buyer agrees to modify the scope of work, the authorized changes are incorporated into the PMB. The contract budget, schedule, and work are updated to coincide with the revised scope.

7.1.11 Compile and Submit Baseline Changes (as applicable) (Seller)

There are instances when the baseline needs to be changed. Prominent reasons for changes include:

- Contract modifications that change the scope of work
- Significant variations between plan and actual performance, where the program's management reporting would benefit from a reprogram or Single-Point Adjustment (SPA)
- Impacts during execution that trigger the need for an over target baseline or over target schedule

The PMB should always reflect the most current plan. Baseline changes should be traceable with an audit trail mapping contract actions to authorizing documents. A best practice is preparing a Baseline Change Request (BCR) for major contract changes and process modifications. A BCR provides a complete description of a proposed change to an approved PMB and includes impacts to the program scope, schedule, and cost baselines. As previously stated, if the existing plan has drifted too far from the current baseline, then it may be adjusted. Going forward, project performance is measured against the new baseline. Significant changes to the PMB should also be captured in the contract-required performance reporting and new evaluation tolerances should be established as needed.

7.1.12 Prepare and Submit Periodic Indirect Rate Proposals (Seller)

When working on a cost type contract, the management of indirect rate variances during the contract are a part of EVM reporting. Indirect rates should be monitored and an estimate versus actual analysis or "variance analysis" should be performed. A proper variance analysis provides management with timely insight into potential issues (e.g., overbillings) and produces opportunities to utilize EVMS reporting metrics to review and discuss potential contract budget impacts due to indirect rate variances. For instance, a variance reaching a predefined variance threshold can prompt management intervention and corrective action at the project and/or Seller's operational-management level.
Sellers must comply with the FAR 42.704 and:

- Submit an Indirect Cost Rate Proposal (ICP) within the six-month period following the FY end
- True-up all interim vouchers within 60 days after rates are settled
- Close subcontracts before closing the prime contract
- Prepare the final voucher within 120 days after rates are settled, including subcontractor rates

It should be noted that the process required for settling indirect rates and subcontracts can prolong closing the contract if not adequately monitored. Therefore, this activity should be carefully managed and tracked by Sellers.

An ICP is a report of actual indirect expenses, submitted by contractors that have cost reimbursable contracts. During this audit, the U.S. Government reviews the Contractor's actual expenses and rates for allowability, allocability, and reasonableness and compares them to the contractor's billed expenses and rates. In other words, it compares the PBRs (used for interim reimbursement) to the audited rates. There are three different types of rates the U.S. Government uses for this, see the Closeout Rates table below for information.

Closeout Rates

Closeout Type	Rates	Reference
Quick Closeout	Negotiated Rates	FAR 42.708
Early Closeout	Final or Negotiated	FAR 52.232-7
Standard Closeout	Final Audited Rates	FAR 42.705-1 & 42.705-2

The following includes detailed descriptions of these closeout rates:

- *Quick Closeout Rates*. The U.S. Government can settle a completed contract using Quick Closeout Rates if the requirements of FAR 42.708 are met. This methodology allows the Contractor and U.S. Government to negotiate rates in advance of final rates. This option is available to contracts with a final period of performance (PoP) less than a full FY, relatively small, incurred costs in the final FY (lessor of $1 million or 10% of contract value), and where it is generally mutually advantageous to the U.S. Government and the Contractor (based on assessed risk factors) and an agreement can be reached on a reasonable estimate of allocable dollars. Indirect rates must be deemed to be fair and reasonable to both parties. Estimated rates for final FY are based on Contractor's actual data adjusted for historical disallowances found in prior FYs.
- *Early Closeout Rates*. Contracts that do not meet the quick closeout requirements may be eligible for early closeout procedures if they meet the requirements of FAR Clause 52.232-7, Payments under Time-and-Materials and Labor Hour Contracts. The following contracts are early closeout candidates: IDIQ contracts (FAR 52.232-7); T&M (FAR 52.216-29 or 52.216-30); and CPFF contracts (FAR 52.216-8).
- *Standard Closeout Rates*. Contractors closing out contracts using standard closeout rates must following the requirements of FAR 42.705-1 and FAR 42.705-2. Any contract that does not qualify for quick or early closeout is a standard closeout candidate.

If the Government disallows a portion of the proposed costs, then the rates are decremented or downwardly adjusted. Ultimately, the Seller's revenue is reduced.

7.2 Phase 6 – Contract Closeout or Termination[xlvi]

The objective of closing out a contract is to ensure contract requirements were fully executed, all deliverable items were delivered and accepted, and to establish the final price and make the final payment. This process is multifaceted and requires intense coordination among different private and public entities and various departments within each organization. Everyone plays a different yet equally vital role in ensuring that contracts are closed using the optimal path outlined in the Closeout Time Frames table below.

Closeout Time Frames

Contract Type	Government Standard for Closeout
Firm-fixed price contracts	6 months
Cost reimbursement contracts (e.g., T&M and Labor Hour)	36 months
All other contract types (e.g., fixed price redetermination, fixed price with economic price adjustment, and basic ordering agreement/blanket purchase agreement)	20 months

Contracts are considered overage when they remain open beyond the FAR standard time frames. In summary, an EVM closeout is complete when all administrative actions are finished, all disputes settled, and the final payment is made. Refer to FAR 4.804, for procedures to closing out contract files, contains the procedures for closing out contracts.

7.2.1 Review Physical Work Completion (Buyer)

The Buyer inspects all supplies and services for compliance with contract terms and conditions. Contracted products and services meeting quality and performance standards are accepted. The Contract Administration Office is responsible for initiating administrative closeout of the contract after receiving evidence of its physical completion.

7.2.2 Process Final Invoices (Buyer)

Once the Buyer receives the signed quality inspector's authorization and takes possession of contracted items, it begins to process invoices and Standard Form (SF) 1034 public vouchers. The Buyer initiates audit requests.

The Buyer is often represented by a variety of specialized organizations. Their prominent roles and responsibilities are:

- Ensuring that Government supplies and services are delivered on time, at projected cost, and meet all performance requirements.
- Ensuring sufficient funds are available for obligation.
- Ensuring the Seller receives prompt and timely payments.

The Closeout Team Functions figure below summarizes the roles of the organizations above.

Closeout Team Functions

7.2.3 Verify Physical Work Completion and Submit Final Reports (Seller)

The Seller is responsible for meeting all contractual requirements including delivery of the required goods and services described in the SOW to the Buyer. With respect to contracts with an EVM requirement, Sellers are also required to meet the performance benchmarks defined in the PMB and submit required (final) data deliverables (e.g., Contract Data Requirements List (CDRL) Items) on time. In instances where the Seller employs subcontractors, the Seller must assume many of the responsibilities ascribed in this section to the Buyer to ensure subcontracts are properly closed out in conjunction with their own subcontract closeout activities. For instance, the prime must ensure:

- All goods are delivered and accepted
- All contracted services are performed and accepted
- All Material Inspection and Receiving Report (MIRR) or DD250(s) are executed for goods and data, as required
- All direct labor and material costs are incurred
- All excess material is disposed

Before a contract is closed the Seller must ensure it meets it EVMS performance standards. This determination is made by performing the following:

- Reconciling the performance reports
- Adjusting the CAs and EACs for actual completion status
- Adjusting the earned value for the actual completion status

The Seller fulfills their contractual obligations. For most Government contracts, a DD Form 250, Material Inspection and Receiving Report (MIRR) is completed. This form documents the inspection, acceptance, receipt, and delivery of the services and/or products.

Other Administrative Requirements

Contract Closeout requires the Seller to comply with a number of general (i.e., not unique to contracts with an EVMS requirement) administrative requirements. These are listed in the FAR at Subpart 4.408 and include:

1. Complete the disposition of classified material
2. Clear final patent report (DD882)
3. Clear final royalty report (if required)
4. Received property clearance report
5. Settle any outstanding Value Engineering Change Proposals (VECPs)
6. Ensure all closeout checklist items are complete
7. Draft contract completion statement

7.2.4 Submit and Process Final Invoices (Seller)

The Seller is responsible or preparing adequate invoices to help insure prompt and timely payments. The Seller submits its final invoices for payment using SF 1034, Public Voucher for Purchases Other than Personal, SF 1035, Continuation Sheets, or its own invoice templates. Billed amounts are created using approved rates and should accurately reflect special cost limitations and other contract restrictions. The Seller is responsible for maintaining adequate support for its billings.

Obtaining Final Payment

Seller prepares and submits final vouchers no later than 120 calendar days after settlement of final overhead rates. The Seller submits and the Buyer pays the Seller's certified final invoice (which consist of costs derived from audited and settled rates) as the final closeout action. In doing so the Buyer completes a contract funds review and de-obligates excess funds. Concurrent with this action, the Seller submits an assignment of refunds, rebates, credits and other amounts document and a release of claims document which:

- Reconciles to the total amount claimed on the SF-1035 (totals allowable cost-plus fee)
- Relieves the Seller of future liability
- Binds the Seller to accepting the final payment as full and complete satisfaction of all debts

For DoD contracts, the Seller processes the Final Pay Notice of Last Actions (NLA). Accordingly, the final invoice is forwarded to DFAS to render payment.

End Notes

[i] American National Standards Institute (ANSI) approved National Contract Management Association (NCMA) Contract Management Standard (CMS[TM]), Third Edition [ANSI/NCMA ASD 1-2019 (R2022)]

[ii] National Defense Industrial Association Guide (NDIA) Integrated Program Management Division (IPMD) guides and resources are available at https://www.ndia.org/divisions/ipmd/division-guides-and-resources

[iii] The Competition in Contracting Act (CICA) of 1984 (41 U.S.C. 253) found in the FAR Subpart 6.1″Full and Open Competition"

[iv] Clinger-Cohen Act of 1996 [40 U.S.C. 1401 (3)]

[v] National Defense Industrial Association Guide (NDIA) Integrated Program Management Division (IPMD) guides and resources are available at https://www.ndia.org/divisions/ipmd/division-guides-and-resources

[vi] Capital Programming Guide V 3.1 Supplement to Office of Management and Budget Circular A–11: Planning, Budgeting, and Acquisition of Capital Assets

[vii] https://www.acq.osd.mil/asda/ae/ada/ipm/about-evm-cr.html

[viii] National Defense Industrial Association Guide (NDIA) Integrated Program Management Division (IPMD) guides and resources are available at https://www.ndia.org/divisions/ipmd/division-guides-and-resources

[ix] ANSI/NCMA ASD 1-2019 (R2022), 2.0 Pre-Award; 2.1 Develop Solicitation

[x] ANSI/NCMA ASD 1-2019 (R2022), 2.0 Pre-Award; 2.1 Develop Solicitation, 2.1.1 Plan Solicitation; 2.1.2 Request Offers

[xi] ANSI/NCMA ASD 1-2019 (R2022), 3.0 Award; 3.1 Form Contract; 3.1.1 Price or Cost Analysis; 3.1.2 Plan Negotiations; 3.1.3 Select Source

[xii] ANSI/NCMA ASD 1-2019 (R2022), 3.0 Award; 3.1.3 Select Source

[xiii] ANSI/NCMA ASD 1-2019 (R2022), 4.0 Post Award; 4.1 Perform Contract; 4.1.1 Administer Contract

[xiv] ANSI/NCMA ASD 1-2019 (R2022), CMS; 4.0 Post Award; 4.2 Closeout

[xv] ANSI/NCMA ASD 1-2019 (R2022), 2.0 Pre-Award; 2.2 Develop Offer

[xvi] ANSI/NCMA ASD 1-2019 (R2022), 2.0 Pre-Award; 2.2 Develop Offer; 2.2.2 Prepare Offer

[xvii] ANSI/NCMA ASD 1-2019 (R2022), 3.0 Award; 3.1 Form Contract; 3.1.1 Price or Cost Analysis; 3.1.2 Plan Negotiations; 3.1.3 Select Source

[xviii] ANSI/NCMA ASD 1-2019 (R2022), 3.0 Award; 3.1.3 Select Source

[xix] ANSI/NCMA ASD 1-2019 (R2022), 4.0 Post Award; 4.1.1 Administer Contract; 4.1.2 Ensure Quality; 4.1.4 Manage Changes

[xx] ANSI/NCMA ASD 1-2019 (R2022), 4.0 Post Award; 4.2 Closeout Contract

[xxi] ANSI/NCMA ASD 1-2019 (R2022), 2.0 Pre-Award

[xxii] ANSI/NCMA ASD 1-2019 (R2022), 2.0, Pre-Award, 2.1 Develop Solicitation

[xxiii] ANSI/NCMA ASD 1-2019 (R2022), 2.0, Pre-Award, 2.1 Develop Solicitation

[xxiv] Department of Defense Earned Value Management Implementation Guide – OUSD A&S (AE/AAP), page 4 (January 18, 2019)

[xxv] ANSI/NCMA ASD 1-2019 (R2022), 2.0, Pre-Award, 2.2 Develop Offer

[xxvi] ANSI/NCMA ASD 1-2019 (R2022), 2.0, Pre-Award, 2.2 Develop Offer

[xxvii] Truthful Cost or Pricing Data (41 USC §3501) as found in the FAR 15.403

[xxviii] 41 USC §3501 (a) (1) and (b) (2) (B)

[xxix] ANSI/NCMA ASD 1-2019 (R2022), 3.0 Award; 3.1 Form Contract

[xxx] ANSI/NCMA ASD 1-2019 (R2022), 3.0 Award; 3.1 Form Contract, 3.1.1 Price Analysis; 3.1.2 Plan Negotiations

[xxxi] ANSI/NCMA ASD 1-2019 (R2022), 3.0 Award; 3.1 Form Contract, 3.1.3 Select Source

[xxxii] ANSI/NCMA ASD 1-2019 (R2022), 3.0 Award; 3.1 Form Contract, 3.1.2 Plan Negotiations

[xxxiii] National Defense Industrial Association Guide (NDIA) Integrated Program Management Division (IPMD) guides and resources are available at https://www.ndia.org/divisions/ipmd/division-guides-and-resources

[xxxiv] National Defense Industrial Association Guide (NDIA) Integrated Program Management Division (IPMD) guides and resources are available at https://www.ndia.org/divisions/ipmd/division-guides-and-resources

[xxxv] National Defense Industrial Association Guide (NDIA) Integrated Program Management Division (IPMD) guides and resources are available at https://www.ndia.org/divisions/ipmd/division-guides-and-resources

[xxxvi] https://obamawhitehouse.archives.gov/sites/default/files/omb/procurement/memo/nasa_faa_evms_reciprocity_mou_march_31_2016.pdf

[xxxvii] 7 Principles of Earned Value Management Tier 2 System Implementation Intent Guide- U.S. Department of Health and Human Services (21 December 2011)

[xxxviii] National Defense Industrial Association Guide (NDIA) Integrated Program Management Division (IPMD) guides and resources are available at https://www.ndia.org/divisions/ipmd/division-guides-and-resources

[xxxix] ANSI/NCMA ASD 1-2019 (R2022), 3.0 Award; 3.1 Form Contract, 3.1.2 Plan Negotiations

[xl] ANSI/NCMA ASD 1-2019 (R2022), 4.0 Post Award, 4.1 Perform Contract; 4.2 Close Contract

[xli] ANSI/NCMA ASD 1-2019 (R2022), 4.0 Post Award, 4.1 Perform Contract; 4.1.1 Administer Contract

[xlii] ANSI/NCMA ASD 1-2019 (R2022), 4.0 Post Award, 4.1 Perform Contract; 4.1.2 Ensure Quality

[xliii] National Defense Industrial Association Guide (NDIA) Integrated Program Management Division (IPMD) guides and resources are available at https://www.ndia.org/divisions/ipmd/division-guides-and-resources

[xliv] National Defense Industrial Association Guide (NDIA) Integrated Program Management Division (IPMD) guides and resources are available at https://www.ndia.org/divisions/ipmd/division-guides-and-resources

[xlv] ANSI/NCMA ASD 1-2019 (R2022), 4.0 Post Award, 4.1 Perform Contract; 4.1.2 Ensure Quality

[xlvi] ANSI/NCMA ASD 1-2019 (R2022), 4.0 Post Award, 4.2 Close Contract