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# Earned Value Management

Earned Value Management (EVM) is a program management tool, technique, and discipline that facilitates systematic planning for and monitoring of high value, complex projects. It integrates a project's scope of work with the related budget and schedule to permit detailed assessment of overall performance during the life of the project.

Several government-wide guidance documents govern the definition and use of EVM systems (EVMS). Guidelines outlining the qualities and characteristics of an EVMS are set forth in the American National Standards Institute/Electronic Industries Alliance (ANSI/EIA) Standard-748 (most current version). More detailed and specific guidance and direction is contained in OMB Circular A-11, Preparation, Submission and Execution of the Budget, specifically in Part 7 of that Circular A-11, Planning, Budgeting, Acquisition, and Management of Capital Assets, and the supplement to OMB Circular A-11, the Capital Programming Guide.

Based on this collective OMB guidance, EVMS is intended to be used on those parts of acquisitions that will involve developmental effort. This would include not only those acquisitions designated by the agency as major systems but also those acquisitions that include significant developmental, modification, or upgrade during the operational or steady-state phase of a program.

The FAR rule on EVMS became effective on July 5, 2006. Its purpose is to implement EVMS policy in accordance with OMB Circular A-11. 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.

To that end, HHS and its components, such as ASPR have developed a tailored approach to its environments. For example, most of the acquisitions at the ASPR, including those for BARDA, are unique in that they are not Information Technology projects or construction projects; Therefore, ASPR has developed an ASPR ANSI/EIA-748 Standard for Earned Value Management Systems Implementation approach ("7 Principles of Earned Value Management"). These principles allow flexibility to an EVMS structure but still meet the spirit and intent of applicable EVM guidance. It also incorporates discipline in implementation and operations and provides the same reporting data outlined by OMB. Key features and related reporting requirements and deliverables associated with the 7 Principles of EVM for each tier are summarized below.

- 1. Plan all work scope to completion
- Break down the program work scope into finite pieces that can be assigned to a responsible person or organization for control of technical, schedule and cost objectives
- 3. Integrate program work scope, schedule, and cost objectives into a performance measurement baseline plan against which accomplishments can be measured. Control changes to the baseline.
- 4. Use actual costs incurred and recorded in accomplishing the work performed.
- 5. Objectively assess accomplishments at the work performance level.
- Analyze significant variances from the plan, forecast impacts, and prepare an estimate at completion based on performance to date and work to be performed.
- 7. Use earned value information in the company's management processes.

The 7 Principles of EVM Guide is based on a tiered approach to implementing EVM. The tiers are based on three main factors: type of acquisition, dollar value of the acquisition and the Technical Readiness Level (TRL).

The table below shows key features and related reporting requirements and deliverables associated with the 7 Principles of FVM

## Tier1

## Notable Feature

>=\$25M Acquisition Cost

Requires a system that is compliance with ANSI/EIA 748 Standards Relevant FAR/HHSAR contract clauses are incorporated into contract.

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Preparing Proposals
Preparing White Papers
Earned Value Management
Small Business Program
The ASPR Business Toolkit

#### Description

IF construction contract and IT contract types with total acquisition costs GREATER than or EQUAL to \$25M in size. THEN ANSI/EIA-748 Standard for EVMS is required.

AND all relevant FAR/HHSAR clauses pertaining to EVMS will be incorporated in the contract.

NDIA PMSC ANSI/EIA 748 Standard for EVMS Intent Guide (EVMIG) used as guidance.

#### The contractor should be able to provide or meet the following deliverables and requirements

All of the required deliverables and requirements in order to meet IAW ANSI/EIA 748 Standards and the 32 EVM criteria

HHS requires the Contractor to obtain validation and acceptance of its EVM system during the base period of performance of the contract.

#### Tier 2

#### Notable Feature

>=\$25M Acquisition Cost

Requires an "application" of 7 principles.

#### Description

IF countermeasure research and development (R&D) contracts with total acquisition costs GREATER than or EQUAL to \$25M in size

AND Technical Readiness Level (TRL) of LESS than 7

THEN application of 7 Principles of EVM is required

#### The contractor should be able to provide or meet the following deliverables and requirements

Documentation needed for the Performance Measurement Baseline (PMB) Review (PMBR):

WBS Dictionary; Control Account Work Authorization Document; Integrated Master Schedule (IMS); Responsibility Assignment Matrix (RAM); Control Account Plans; PMB Log; Baseline Revision Documents; Risk Register Requirements and products related to the principles (by #) include:

- 1. WBS, WBS Dictionary/Work Authorization Document
- 2. An Integrated Schedule that includes person/organization responsible for work (e.g., Control Account Manager)
- Budget/EV Tool that integrates scope, cost and schedule baselines into a Performance Measurement Baseline (PMB). Provides monthly time-phased Control Account Plan Reports. Monthly CAP Reports are only for Tier 2.
  - a. Procedures, tools, and documentation for incorporating changes to the baseline (PMB Change Control).
- Accounting System that uses work order/job order/task charge code number structure that uniquely identifies costs
  at Control Account Level or lower. Also, Accounting System reconciles or is reconcilable to Contract Performance
  Report (CPR) Formats 1 and 5.
- Use generally acceptable and objectively measurable units or milestones to gauge progress at work performance level.
- Analyze significant variances from the plan, forecast impacts, and prepare an estimate at completion based on performance to date and work to be performed
  - a. Have capability to deliver monthly reports (CPR Formats 1 and 5) that calculate CV and SV on at least a cumulative basis at control account level and higher. Reports should also include BAC and EAC. Variances that exceed the contractual variance threshold(s) shall include a description of the root cause, impact, and correction action.
  - b. Prepare an Estimate at Completion (EAC) based on performance to date and an ETC for the budgeted cost of work to be performed (BCWR).
- Be able to demonstrate during site visit like an IBR/PMBR, that contractor's EVMS is integrated in the Company's
  Management Processes, and that data produced from it is used as a management tool (e.g., PMRs, Quad Charts,
  etc.)

## Tier 3

# **Notable Feature**

>\$10M, but <\$25M Acquisition Cost Requires a system that is "consistent" with 7 principles

## Description

IF countermeasure research and development (R&D) contracts with total acquisition costs GREATER than \$10M but LESS than \$25M

**THEN** application of EVM principles for tracking cost, schedule, and technical performance are required to be consistent with the 7 Principles of EVM implementation.

## The contractor should be able to provide or meet the following deliverables and requirements

Requirements for Tier 2 are the starting point, though tailoring is at the discretion of ASPR (see example in last bullet below). Notable differences between Tier 2 and Tier 3 include:

In a Tier 3 implementation, it is not necessary to provide a WBS Dictionary or a Work Authorization Document (WAD), but it is important to develop a WBS and define the scope of work for each level of the WBS at the reporting level (usually level 3 or 2).

Preparing monthly reports for Control Account Managers (Tier 2)

Use of a robust EVM tool. Alternatively, Tier 3 efforts can use a tool like MS Project

Monthly time phased S/P/A report required for Tier 3.

It is possible for a Tier 3 program to submit a fully "statused" IMS monthly at the Control Account level at minimum (Work Package is the lowest level) in lieu of CPR Formats 1 and 5. Regarding cost, a time-phased spend plan may suffice if agreed to by all parties.

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