Chapter 7 – Earned Value Management

Table of Contents

References

(a) Federal Acquisition Regulation (FAR)

(b) Defense Federal Acquisition Regulation Supplement (DFARS)

(c) Electronic Industries Alliance Standard 748, Rev D (EIA-748D)

(d) DoDI 5000.02, Operation of the Adaptive Acquisition Framework

(e) DoDI 5000.02T, Operation of the Defense Acquisition System

(f) NAVSEAINST 7000.4H, Earned Value Management

(g) Department of Navy Earned Value Management Implementation Guide (DON EVMIG, 8 August 2017)

(h) DoD Earned Value Management System Interpretation Guide (14 March 2019)

(i) ASN(RDA) memo of 9 Apr 2007, Center of Excellence for Earned Value Management (CEVM)

(j) OUSD AT&L memo of 1 Sep 2015, Class Deviation - Earned Value Management System Threshold

(k) NAVSEAINST 4000.6B, Data Management Program

(l) SECNAVIST 5000.2F, Defense Acquisition System and Joint Capabilities Integration and Development System Implementation

(m) NAVSEAINST 5400.111A , NAVSEA Engineering and Technical Authority Policy

(n) NAVSEA SUPSHIP EVMS Surveillance Operating Procedure (May 2020)

(o) MIL-STD-881E, DoD Standard Practice Work Breakdown Structures for Defense Materiel Items

(p) DoD Integrated Master Plan and Integrated Master Schedule Preparation and User Guide (21 Oct 2005)

(q) Program Manager’s Guide to the Integrated Baseline Review Process (4 Jun 2003)

(r) NAVSEA letter Ser 022/007 - Contractor Business Systems Guidance of 28 Nov 2018

Chapter 7 – Earned Value Management

7.1 Introduction

This chapter provides information regarding the principles of Earned Value Management (EVM), DoD's requirements for EVM, the guidelines used to approve a contractor's Earned Value Management System (EVMS), and the responsibilities of SUPSHIPs and other activities regarding EVM. It also provides guidance concerning the SUPSHIP organization for EVMS support and analysis of shipbuilder cost performance and integrated program management reports submitted under covered contracts.

EVM has proven its value over many years. Effective implementation and application of EVM systems by contractors ensures that they possess and use an adequate management system that integrates cost, schedule, and technical performance. This approach provides better overall planning and control discipline on government contracts. A properly employed, compliant EVMS provides the Program Manager (PM) and SUPSHIP with valid cost, schedule, and technical progress information needed for effective decision-making, risk management, and contract administration.

The contractor's EVMS is considered to be a contractor business system as defined by DFARS 242.7000. Qualifying contracts are to include the DFARS clauses 252.234-7002, Earned Value Management System, and 252.242-7005, Contractor Business Systems. These clauses establish the requirement for the contractor to establish and maintain acceptable business systems in accordance with the terms and conditions of the contract. If a business system is found to have a significant deficiency, the Contractor Business System clause permits contract withholdings to occur. See SOM 3.18.6, Contractor Business System Specifics, for a more detailed treatment of this topic.

7.2 Policy and Directives

In accordance with reference (a), FAR 34.2, an Earned Value Management System is required for major acquisitions for development and for other acquisitions in accordance with agency procedures. For DoD acquisitions, DFARS Subpart 234.201, reference (b), imposes the following EVMS contract requirements:

a. For cost or incentive contracts and subcontracts valued at $20 million or more, the EVMS shall comply with the guidelines in Electronic Industries Alliance Standard 748D (EIA-748D), reference (c).

b. For cost or incentive contracts and subcontracts valued at $100 million or more, the contractor shall have an EVMS that has been determined by the cognizant Federal agency to be in compliance with the guidelines in EIA-748.

c. For cost or incentive contracts and subcontracts valued at less than $20 million:

   (1) The application of EVM is optional and is a risk-based decision.

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(2) A decision to apply EVM shall be documented in the contract file.

(3) A cost-benefit analysis shall be conducted following the procedures at DFARS PGI 234.201 (1) (iii).

d. For firm-fixed-price contracts and subcontracts of any dollar value:

(1) The application of EVM is discouraged.

(2) Follow procedures at DFARS PGI 234.201 (1) (iv) for obtaining a waiver before applying EVM.

Note: EVM is not required on contracts, subcontracts, intragovernment work agreements, and other agreements less than 18 months in duration, including options, per reference (d), DoDI 5000.02, Operation of the Adaptive Acquisition Framework, and the prior DoDI 5000.02T (transitional document), Operation of the Defense Acquisition System, reference (e).

Reference (f), NAVSEAINST 7000.4H**, Earned Value Management, establishes NAVSEA policies, procedures, and responsibilities for the implementation of Earned Value Management in NAVSEA procurements. Reference (g), the Department of Navy Earned Value Management Implementation Guide (DON EVMIG), provides uniform procedures within DON concerning EVM. Reference (h), the DoD Earned Value Management System Interpretation Guide (DoD EVMSIG), provides the basis for DoD to assess EVMS compliance to the EIA-748 guidelines.

7.3 Roles and Responsibilities

The responsibility for EVM in DoD for shipbuilding is shared by five organizations:

- Integrated Program Management Division of the Office of the Undersecretary of Defense Office for Acquisition, Analytics and Policy (OUSD AAP)
- Defense Contract Management Agency (DCMA)
- Component EVMS Focal Point (e.g., the Naval Center for Earned Value Management (CEVM))
- Procuring Activity (e.g., NAVSEA)
- SUPSHIP as the assigned Contract Administration Office (CAO)

The following sections discuss the general responsibilities associated with each of these activities.

7.3.1 Integrated Program Management (IPM) Division of OUSD AAP

The IPM Division of OUSD AAP serves as the DoD focal point for all policy, guidance, and competency relating to EVM. One of the division's goals is to increase earned value's constructive attributes for the DoD firms managing acquisition programs by reducing the economic burden of inefficient implementation of EVM. The IPM Division is dedicated to the

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idea that EVM is an essential integrated program management tool and not merely a contractually required report. The division has formal cognizance over the EVMS Interpretation Guide (EVMSIG), which is to be used as the basis for DoD to assess EVMS compliance to the EIA-748 guidelines.

7.3.2 Defense Contract Management Agency (DCMA)

Per DFARS 234.201(3), DCMA is responsible for determining earned value management system compliance when DoD is the cognizant Federal agency. To this end, DCMA works with various government and industry teams to develop practical EVMS guidance, administers contractual activities, and conducts Compliance Reviews (CRs), ensuring initial and ongoing compliance with the DoD EVMS criteria as outlined in the DoD EVMSIG.

7.3.3 Component EVMS Focal Point

Each military service component establishes a focal point to serve as the point of contact for coordination and exchange of information on EVM. In accordance with reference (i), ASN(RDA) memo of 9 Apr 2007, the Department of the Navy's EVM focal point is the Naval Center for Earned Value Management (CEVM) within the ASN(RDA) office. The EVMS focal point is responsible for effective policy implementation within their service, including ensuring consistency with DoD policy. In support of this responsibility, the CEVM has issued the Department of the Navy Earned Value Implementation Guide (DON EVMIG). As previously noted, the guide provides uniform procedures for all matters concerning implementation of EVM on DON acquisition programs.

7.3.4 NAVSEA (Procuring Activity)

DON EVMIG, paragraph 2.1.3.6, defines the Procuring Activity as the Program Management Office (PMO), the contracting organization, and the Integrated Product Teams (IPTs) that support the PMO. The PM and the PMO help ensure that all solicitations and contracts contain the correct EVMS and/or Integrated Master Schedule (IMS) requirements, tailored as appropriate for the specific nature of the program in accordance with DoD policy. The PM and PMO also have the responsibility to conduct the IBR, perform integrated performance analysis, proactively manage the program utilizing performance data, and accurately report performance to decisionmakers. In shipbuilding, the PM/PMO are supported by several NAVSEA deputy commanders and functional offices. The roles and responsibilities for each of the organizations are detailed below and are contained in their entirety in NAVSEAINST 7000.4H**.

Deputy Commander for Ship Design Integration & Engineering (NAVSEA 05)

1. Perform EVM analysis and development of independent Estimates at Completion (EAC) in support of NAVSEA and program offices.
2. Support the Procuring Contracting Officers (PCO) and program offices in determining and recommending EVM requirements in solicitations and contracts that meet the various thresholds for EVMS.

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3. Coordinate with program offices on development of cost reporting/EVM related data item requirements, i.e., Contract Data Requirements List items (CDRL), before issuance of solicitations and subsequent review and coordination on any modifications before and after contract award.

Program Manager

1. Include all appropriate requirements set forth in higher level documents, acquisition plans or acquisition papers, solicitations and contracts meeting threshold levels of Table 8 in DoDI 5000.02T. Enclosure (1) of reference (j), OUSD AT&L memo of 1 Sep 2015, provides a summary of the thresholds and EVM requirements.
2. Coordinate cost reporting and EVM related CDRLs with SEA 05C and other appropriate stakeholders before Request for Proposal (RFP) issuance and subsequent modifications before or following contract award, per reference (k), NAVSEAINST 4000.6B**, Data Management Program. Requests to waive EVM related requirements of DoDI 5000.02, SECNAVIST 5000.2F, reference (l), and NAVSEAINST 5400.111A**, reference (m), will be developed with SEA 05C support.
3. Coordinate contractor requests for execution of Over Target Baseline (OTB) or Over Target Schedule (OTS) through SEA 05C, SEA 02, and the CAO for review and comment before approval.
4. In coordination with SEA 05C, establish a process to support effective communication across the program EVM team. The team will act as the action agent for the PM in cost estimating and EVM analysis activities.
    a. Suggested membership for the EVM team is program office business, financial and EVM personnel, SEA 05C cost and EVM analysts, and CAO (SUPSHIP) EVM analyst. Other stakeholders, such as Ship Design Managers (SDM) and systems engineering personnel, should participate as appropriate.
    b. The PM and SEA 05C will determine the team's meeting frequency to support the development of Program Manager EACs through a review of EVM analyses and EAC recommendations. Where significant variation exists between the projected EACs of the EVM team members, the EAC recommendations provided to the PM will include explanations of the variation to support informed decision-making concerning the establishment of the PM EAC. The basis of EAC recommendations from the program EVM team, i.e., program office, SEA 05C and CAO, will be provided by each organization to support the establishment of the PM EAC.
5. Make full use of Integrated Program Management Reports (IPMRs), Integrated Program Management Data Analysis Reports (IMPDARs), Contract Performance Reports (CPRs), Integrated Master Schedules and other EVM related reports in managing and evaluating contractor performance.

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6. Maintain adequate documentation regarding the implementation of EVM (e.g., MOA, results of IBRs, re-baseline approvals, EAC development documentation). The program office will be the normal repository for such information.

Deputy Commanders / PEOs / NAVSEA Functional Offices

Deputy Commanders, Program Executive Officers (PEOs), and NAVSEA Functional Offices will ensure program managers meet the requirements contained and referenced in NAVSEAINST 7000.4H**.

Deputy Commander for Logistics, Maintenance and Industrial Operations (SEA 04)

1. Ensure that the requirements contained and referenced in this instruction are fulfilled.
2. Provide guidance, jointly with SEA 05C and with inputs from PEOs, to SUPSHIPs regarding requirements for shipbuilder EVMS. Support SEA 05C in providing SME support to SUPHIPs for execution of contractor EVM system responsibilities.
3. Provide required oversight of SUPSHIPs to ensure implementation and effectiveness of shipbuilder EVMS through Procurement Surveillance Program (PSP) functional area reviews as requested.
4. Provide EVM direction and guidance to SUPSHIPs, in coordination with SEA 05C, through the SUPSHIP Operations Manual (SOM) and other appropriate documents.
5. Promote consistent implementation of EVM practices across SUPSHIPs.
6. Act as an advocate for SUPSHIP resource requirements to meet requirements for EVMS oversight functions.

7.3.5 SUPSHIP

SUPSHIPs serve as the CAO for contracts awarded to major shipbuilders under their cognizance (see Contract Administration Services Directory (CASD)). In accordance with NAVSEAINST 7000.4H** and the DON EVMIG, SUPSHIP actions and responsibilities include:

a) Support the PCO and program offices in determining and invoking EVM requirements in solicitations and contracts.

b) Negotiate and execute an advance agreement or letter of acceptance between the Government and the contractor specifying that the contractor will maintain and use the contractor's accepted EVM system as an integral management process on the current as well as future contracts.

c) Conduct EVM surveillance in accordance with reference (n), NAVSEA SUPSHIP EVMS Surveillance Operating Procedure (SOP)** (NAVSEA Fusion access required).

d) Perform IPMR, IPMDAR, CPR, and Contract Funds Status Report (CFSR) analysis and provide an independent EAC to the cognizant PM per the program office MOA. Additional SUPSHIP support to the PM/PMO includes:

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i. Participate in program office processes to support the development of Program Manager EACs. Provide EVM analysis products to the program office and other stakeholders per NAVSEA EVMS SOP and the program office MOA. Support program managers in the development of data requirements for cost reporting/EVM in new contracts or modifications to existing contracts.

ii. Participate in IBRs for contracts under the cognizance of the Administrative Contracting Officer (ACO).

iii. Review and analyze contractor IMS.

e) Support formal review and comment on cost reporting/EVM related data item requirements, i.e., CDRLs, before issuance of solicitations and subsequent modifications before or after contract award.

f) Maintain adequate documentation of certification and system surveillance activities to ensure contractor EVM system compliance. The CAO will be the normal repository for such information.

7.4 EVMS Guidelines Concept

EVMS guidelines were established on the premise that the Government cannot impose a single EVMS for all contractors due to variations in organizations, products, and working relationships.

The guidelines establish a framework within which an adequate integrated cost, schedule, and technical management system fits. The EVMS guidelines are not prescriptive, but simply describe the desired outcomes of integrated performance management.

The EVMS guidelines have been published as the EIA Standard 748, Earned Value Management Systems. In August 1998 DoD adopted the guidelines of EIA-748 for application to major defense acquisition programs. Industry periodically reviews the standard, and the current Revision D was approved in January 2019 without change to the basic guidelines. If the guidelines of the EIA-748 standard are changed or updated, DoD will review and determine if the document still meets the Government's requirements.

7.4.1 EVMS Guidelines

EVMS guidelines are intended to be objective and applicable to large, risky, cost-based government programs. The purpose of the guidelines is to provide the contractor and the Government with accurate data to monitor the execution of a program and to:

- Preclude the imposition of specific cost and schedule management control systems by providing uniform evaluation guidelines to ensure contractor cost and schedule management control systems are adequate.

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- Provide an adequate basis for responsible decision-making by both contractor management and DoD component personnel by requiring that contractors' internal management control systems produce data that:
    - Indicate work progress
    - Properly relate cost, schedule, and technical accomplishment
    - Are timely, accurate, reliable, and auditable
    - Provide DoD component managers with information at a practical level of summarization
- Encourage DoD contractors to adopt management control systems and procedures that are most effective in meeting requirements and controlling contract performance.
- Provide a baseline requirement against which industry standards, both national and international, may be evaluated for authorization by Office of the Undersecretary of Defense Office for Acquisition, Analytics and Policy (OUSD AAP) as substitutes for DoD EVMS guidelines.

7.4.1.1 Key Attributes of EVMS

EVM systems that comply with EIA-748 facilitate:

- thorough planning of all program work scope to completion
- integration of work scope, schedule, and cost objectives into a single baseline plan
- baseline establishment at the beginning of the contract
- baseline control throughout the contract
- objective measurement of work accomplishment at levels where the work is being performed
- summarized reporting for management decision-making
- early identification of problems and the corrective actions needed to mitigate the resulting risk
- development of estimates of final technical, schedule, and contract costs
- visibility into subcontractor performance

7.4.1.2 EIA Standard 748 Guidelines

EIA 748 is composed of 32 EVMS guidelines grouped in the following five major categories:

- organization
- planning, scheduling, and budgeting
- accounting considerations
- analysis and management reports

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- revisions and data maintenance

Refer to the EVMSIG for a detailed description of the 32 guidelines.

7.5 EVM Overview

EVM is a program management tool that integrates technical, cost, and schedule parameters to measure contract performance against a baseline plan. EVM provides SUPSHIP and the PM with contractor cost, schedule, and performance information which:

- relates time-phased budgets to specific contract tasks
- objectively measures work progress
- properly relates cost, schedule, and technical accomplishments
- allows for informed decision-making and corrective action
- is timely, accurate, reliable, and auditable
- allows for statistical estimation of future costs
- supplies managers with status information at the appropriate level
- is derived from the same management systems used by the contractor to manage the contract

7.5.1 Basic EVM Description

The basic requirements for effective implementation of an EVMS include:

1. Defining and organizing all work necessary to complete the project. This typically includes determining the scope of work required by the contract and organizing it into a Work Breakdown Structure (WBS).
2. Planning the work elements of the WBS to determine the time and estimated costs required to perform the work.
3. Developing a project network that integrates the scope of work, schedule, and cost objectives into a time-phased baseline plan that spans the duration of the project.
4. Defining Earned Value Techniques (EVTs) for measuring the accomplishment of the WBS work elements. A variety of different EVTs may be applied within the same EVMS based on the nature of the work.
5. Periodically determining the project's earned value by applying the EVTs to each work element and summing the earned value of all work.
6. Comparing the earned value to the baseline plan to determine cost and schedule variances.
7. Analyzing significant variances to determine their cause, to forecast impact, and to determine appropriate corrective action.

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Refer to Appendix 7-A for a depiction of an EVMS chart and the associated EVMS terminology.

7.5.2 Components and Processes of an Earned Value Management System

Implementation of EVMS for large-scale projects, such as the construction of Navy surface ships and submarines, requires considerable contractor effort and rigorous application of EVMS guidelines and processes if it is to provide accurate information concerning contract performance. The following sections describe the components and processes commonly found in an EVMS supporting major DoD programs.

7.5.2.1 Statement of Work (SOW)

The SOW for the program should reflect all work to be performed. The SOW communicates the work scope requirements for a program and should define the requirements to the fullest extent practicable. It is a basic element of control used in the processes of work assignment and establishment of program schedules and budgets.

7.5.2.2 Work Breakdown Structure (WBS)

The WBS is a direct representation of the work scope defined in the program SOW. It is an essential element of an EVMS used to provide the structure for identifying and categorizing the work to be performed. It is a hierarchal breakdown of the material, services, and operations that must be obtained or completed, by both government and commercial activities, to achieve the objectives of an acquisition program. It provides the framework for program and technical planning, cost estimating, resource allocation, performance measurement, technical assessment, status reporting, and EVMS data collection and reporting.

A preliminary top-level WBS is developed by the PM and systems engineering staff early in the planning phase of acquisition programs utilizing reference (o), MIL-STD-881E, Work Breakdown Structures for Defense Materiel Items. The program WBS is included as part of the solicitation and used by the successful contractor to develop a more detailed Contract Work Breakdown Structure (CWBS), when required by data item description DI-MGMT-81334D, which includes all product elements (hardware, software, data, or services) for which the contractor is responsible. The WBS is structured to best manage and report on program performance. Cost collection requirements, such as Cost and Software Data Reporting (CSDR), may require a different reporting structure than the WBS used in the EVMS for program management.

7.5.2.3 Contractor Program Organization

It is important for the organization to be defined at the onset of the program so that work assignments are identified and responsibilities are clear. A company will organize as required for the optimal management of its business. This includes decisions such as the use of work teams or functional organizations and staffing by direct (project-oriented) or matrix management. This process includes identification and coordination of subcontracted

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work as well as internal efforts. A program organization is dynamic and may change as the program evolves. This program organizational structure, commonly referred to as an Organizational Breakdown Structure (OBS), is hereinafter referred to as an organizational structure.

The organizational structure reflects the way the program is organized. To assign work responsibility to appropriate organizational elements, any WBS and organizational structure must be interrelated; that is, organizational responsibility must be established for identified units of work. The assignment of lower-level work segments to responsible lower-level managers provides a key control point for management purposes and cost collection. This is called the control account (CA). A CA thus represents a defined work scope (with the associated charge number or numbers) given to a single organizational unit (and single manager or team leader) for work performance. EVMS guidelines require that a control account is assigned to a single Control Account Manager (CAM) or team leader with responsibility for managing that account.

When effort is to be subcontracted out, the applicable subcontractor is identified and related to, or integrated with, the appropriate WBS element(s) and organization charged with acquiring the subcontracted item.

7.5.2.4 Program Schedule

The program schedule is the time-oriented plan for accomplishment of work scope requirements on a program. Schedule planning and control, along with work scope definition, are necessary prerequisites for basic program management and effective cost control. The scheduling process begins during original program definition, and overall schedule plans are typically established during the pre-planning for a program.

For DoD acquisition programs, program scheduling takes the form of the Integrated Master Plan (IMP) and the Integrated Master Schedule (IMS). The IMP and IMS provide a systematic approach to program planning, scheduling, and execution. The primary purpose of the IMP and its supporting detailed schedule, the IMS, is their use by the Government and contractor team as day-to-day tools for planning, executing, and tracking program technical, schedule, and cost status.

The IMP is an event-based plan consisting of a hierarchy of program events, with each event being supported by specific accomplishments, and each accomplishment associated with specific criteria to be satisfied for its completion. The IMP is normally part of the contract and thus contractually binding. The IMP is a narrative explaining the overall management of the program.

The IMS is an integrated, networked schedule containing all the detailed discrete work packages and lower-level tasks or activities necessary to support the events, accomplishments, and criteria of the IMP (if applicable). The events, accomplishments, and criteria are duplicated in the IMS. Detailed tasks are added to depict the steps required to satisfy the criterion. The IMS is directly traceable to the IMP and includes all the elements

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associated with production, modification, and delivery of the end product. It must also be traceable to the CWBS, the contract SOW, and the EVMS. Durations are entered for each discrete work package and lower-level tasks, along with predecessor and successor relationships for each schedule task. The result is a fully networked schedule that supports critical path analysis.

During contract execution, the IMP and IMS provide a framework for insight into the contractor's performance. When properly integrated with EVMS, the IMP and IMS should enable the Government and contractor to:

- identify and assess actual progress versus planned progress
- monitor the program critical path and help develop workarounds to problem areas
- assess program maturity
- assess the status of risk management activities based on the inclusion of the program risk mitigation activities in the IMP and IMS
- assess the progress on selected Key Performance Parameters (KPPs) and Technical Performance Measures (TPMs)
- provide an objective, quantitative basis for the contractor's performance assessment rating and award fee
- help develop and support "what-if" scenarios and to identify and assess candidate problem workarounds
- provide better insight into potential follow-on efforts that were not part of the original contract award, for example, the contractor should be able to more clearly define the activities, new interfaces, and other clarifying information necessary for a potential program increment or contract option

Refer to the DoD Integrated Master Plan and Integrated Master Schedule Preparation and Use Guide (21 Oct 2005), reference (p), for more detailed information on the IMP and IMS.

7.5.2.5 Budget Allocation and Resource Planning

Before work can proceed, scope and budget must be authorized to the responsible organizations. The contractor's PM is given an internal authorization to proceed with contract work. Budgets and work scope then are divided among the program's organizations via formal work authorizations that communicate work assignments. All authorized work must be associated with a corresponding budget. This provides a documented trail of work authorization from the program office that clearly assigns program work requirements to the responsible organizations.

The process of work authorization, the approvals necessary, and the form will vary based on individual company policies and procedures. Work authorizations do not need to duplicate the SOW or WBS dictionary and can refer to that document for work scope definition. Work authorizations should describe the work to be performed in as much detail as needed for the

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CAM to understand the work to be accomplished. The company will decide on the flow of the work authorizations and the approvals that are needed. The authorizations may be communicated electronically or on paper. Work authorizations must be issued, before work is due to begin, for improved control and advance planning.

7.5.2.5.1 Establishing Control Accounts (CA) and Control Account Budgets

All CAs must contain a budget, schedule, and scope of work and should realistically represent the manner in which work is assigned and budgeted to organizational units. A resource plan must be developed for every CA and Summary Level Planning Package (SLPP - see section below). The resource plan is the time-phased budget that is developed in accordance with assigned work scope and schedule requirements.

Each CA is allocated a budget that reflects the resources necessary to complete the assigned effort. Budgets established at the CA level must be planned by element of cost and may be stated either in dollars, hours, or other measurable units. When units other than dollars are used, the company must determine the appropriate point of responsibility in their control system for rate application for financial analysis and reporting.

The rates used in determining budgets will also be used for computation of earned value data. In general, the budget process should provide for:

- direct budgets allocated to organizations performing the planned work
- indirect budgets allocated to specific organizations having responsibility and authority for controlling indirect costs
- identification of any Management Reserve (MR) or Undistributed Budget (UB)

7.5.2.5.2 Performance Measurement Baseline (PMB)

The assignment of budgets to scheduled segments of work produces a plan against which actual performance can be measured. This is called the Performance Measurement Baseline. The PMB is a time-phased summation of:

- all Control Accounts (CA)
- Summary Level Planning Packages (SLPP)
- applicable indirect budgets
- any Undistributed Budget (UB)

CAs may include both Work Packages (WP) and Planning Packages (PP). A work package is simply a task, activity, or grouping of work that has been planned and budgeted. A Planning Package is a budget holding account within a CA for future work for which it is not yet practicable to plan the work at the work package level.

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Indirect costs (or overhead) consist of those costs for common or joint objectives that are not readily subject to treatment as direct costs. Indirect budgets are the budgeted indirect (or overhead) costs associated with CAs, SLPP, and Undistributed budgets.

Summary Level Planning Packages are employed when it is impractical to plan authorized work in CAs. An SLPP may be used to establish a high-level holding account for a budget that is identified to some work scope, but which is not yet allocated to a CA. Budget and work should be identified to higher WBS or organizational levels for subdivision into CAs at the earliest opportunity, and certainly before the work actually begins. Because an SLPP is associated with specific work scope, it should not be confused with a Management Reserve (MR) or Undistributed Budget (UB).

It should be noted that PMB includes only the budgeted amount associated with specific scope. For this reason, MR is not included in the PMB because it is an amount withheld from the total budget for management control purposes and is not designated for the accomplishment of specific work. UB is included because it is a temporary holding account for specific work scope that has not yet been planned in detail at the CA or SLPP level.

An effective PMB possesses the following attributes:

- accurately represents all authorized work, and only authorized work, on the contract
- includes a realistic network schedule baseline
- includes a realistic time-phased distribution of budget/resources to the baseline schedule

In addition to these attributes, an effective PMB requires a consistent commitment from both the contractor and the Government to enforce proper baseline change procedures and periodic review of the remaining baseline to ensure that it remains executable.

7.5.2.5.3 Integrated Baseline Review (IBR)

The IBR is a joint assessment led by the PM and supported by SUPSHIP and the contractor to verify the realism and accuracy of the PMB. This involves verifying the technical content of the baseline and assessing the realism and accuracy of the related resources. The IBR is a tool that should be used as necessary throughout the life of the contract. Key benefits of the IBR are:

- joint understanding of program risks
- management insight into the planning assumptions and the resource constraints of the baseline
- comparison of expectations so that any differences can be addressed early in the planning phase
- correction of baseline planning errors and omissions

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- 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
- more executable programs

7.5.2.5.3.1 IBR Policy and Guidance

Table 9 of DoDI 5000.02T requires the PM and technical staff to conduct an IBR on any contract requiring EVM compliance. FAR 34.202 also discusses IBRs. Occasions for the government to require integrated baseline reviews include:

- as early as practicable, and no later than 180 days after contract award
- after the exercise of significant contract options
- with the incorporation of major modifications or as otherwise agreed upon

IBRs are also performed at the discretion of the PM or when major events occur within the life of a program. These events may be a significant shift in the content and time-phasing of the PMB. An IBR should also be conducted whenever an Over Target Baseline (OTB) or Over Target Schedule (OTS) is implemented.

Refer to the DON EVMIG for more detailed information regarding the IBR. Additional guidance is also contained in a guide prepared by a joint DoD/NDIA team, the Program Manager's Guide to the Integrated Baseline Review Process (4 Jun 2003), reference (q). While this is not a detailed how-to guide, it does describe the key attributes of the IBR and establishes a framework for improving the consistency of the IBR across DoD.

7.5.2.6 Accounting Considerations

An EVMS itself is not an accounting system. It does, however, rely on actual cost data from the contractor's accounting system for accurate reporting of program costs and measurement of contract performance. The establishment of work orders and other aspects of the accounting process must be coordinated with the establishment of CAs and other aspects of the budgeting process so that direct comparison and analysis can be performed.

The accounting system must be capable of accounting for all resource expenditures on an "applied" basis (i.e., on an "as-used" or "as-consumed" basis). This requirement is fairly straightforward in the categories of direct labor (where timecards or other time measurement devices are used) or other direct charges (where services are typically charged on a per-unit basis, such as per man-hour of direct effort).

Acceptable costing techniques should be used to fully account for all material purchased for the program. To ensure effective performance measurement of material takes place, the contractor's accounting system should accurately accumulate material costs to the

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appropriate CA. Where actual costs are not available in a timely manner, estimated costs should be applied and adjustments made when actual costs are available.

7.5.2.7 Earned Value Techniques

There are several basic earned value techniques applicable to discrete work package efforts (efforts with definable scope and objectives that can be scheduled and on which progress can be objectively measured). Three basic techniques are:

- weighted milestones
- standard hours
- management assessments (only when these objective techniques are not feasible)

There are many variations and combinations of these techniques. Also, quantitative formulas may be used to compute earned value for cases such as work in progress or inventory materials. These formulas, such as the Program Evaluation Review Technique (PERT) method for material, can cause data distortions, e.g., overstated Budgeted Cost for Work Performed (BCWP), if not properly maintained. While this technique may be appropriate for small value consumables, it is not an acceptable technique for performance measurement of high-value material that can be treated as discrete material items.

The valued milestone technique involves the assignment of budget to specific work objectives (milestones). That value is earned as the milestones are completed. It is important for the milestones to be natural and meaningful points of accomplishment.

The use of standard hours technique (“equivalent units” is a similar process) is common in manufacturing accounts. Budget is time-phased in relation to the standard hour plan and should reflect the actual physical accomplishment of tasks within the work package. Earned value is accrued in proportion to the standard hour status as earned standards are sold/credited in the shops.

Management assessment may be used to determine the percentage of work completed for a task or group of tasks only when an objective technique to determine the percentage is not feasible. Earned value is then calculated by applying that percentage to the total budget for the work. Management assessment may include the use of metrics for work measurement. Durations for these work packages should be kept short to minimize any distortions caused by their subjective nature.

The objective earned value techniques (valued milestones or standard hours) are always preferred, but each technique has its own merits, and a company should use the most objective techniques that best suit its management needs.

For short duration work packages (i.e., those of two months duration or less), other earned value techniques are acceptable, such as 0/100 and 50/50. In the 0/100 technique, 100% of the budget may be reported as earned when the work package is closed. In the 50/50

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technique, 50% of the budget is earned when the work package is started, and the remaining 50% is earned when the WP is closed.

7.5.2.7.1 Planning and Control of Level of Effort Activities

Level of Effort (LOE) is work scope of a general or supportive nature for which performance cannot be measured or is impractical to measure. Resource requirements are represented by a time-phased budget scheduled in accordance with the time the support will likely be needed. For discrete WPs, accomplishment can be measured based on the completed pieces of work, but LOE is "measured"' through the passage of time. Since the earned value for LOE is equal to the budget for the same time period, the performance data provided is simply a comparison of budgeted to actual cost.

LOE activity should be separately identified from discrete work packaged effort to avoid distorting that which is measurable. Some general guidelines for LOE are:

- The amount of LOE activity will vary among performing organizations, but it should be held to the lowest practical level.
- LOE budgets should be separately substantiated and planned as direct labor, material/subcontract, or other direct costs. LOE activity should be budgeted on a time-phased basis for control and reporting purposes.
- When LOE and discrete effort are mixed within the same CA, the CAM must ensure visibility into the performance of the discrete effort.
- LOE may be replanned if the work will not occur when planned or will slip past planned (not contract) milestones. This avoids artificial cost variances.

7.5.2.8 Performance Measurement and Analysis

Earned value is a direct measurement of the quantity of work accomplished. Earned value is a value-added metric that is computed based on the resources consumed compared to the accomplished work scope.

Earned value analysis evaluates program performance and facilitates problem identification for more effective management action. It also permits segregating schedule and cost problems for early and improved visibility of program performance. Management actions will typically involve lower-level analysis of problems and implementation of corrective actions to restore or improve contract performance. Continued EV analysis permits analysis of these corrective actions to assess their effectiveness.

See Appendix 7-A for a graphical representation of EVMS terms and performance measurements.

7.5.2.8.1 Significant Variances

Reasonable selection criteria should be established to ensure proper analysis of significant problems and not cause an excessive burden on the CAM and mid-level managers. The

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selection criteria should ensure all significant variances are analyzed, and any external reporting requirements are supported. Although the frequency and nature of external reports are dictated by the contract, the frequency and style of reports for internal management is a company option. Unless otherwise specified in contracts, standardized reports and formats may be used for customer reports on subcontracts or Government contracts per mutual agreement, provided that the applicable IPMR, IPMDAR, and CPR formats are submitted using the applicable DoD-approved XML or JSON data formats to the EVM Central Repository (EVM-CR).

7.5.2.8.1.1 Schedule Variance (SV)

Comparing the earned value (the budgeted value of work accomplished) during a given period to the planned value (the budgeted value of work scheduled) during the same period provides a valuable indication of schedule status in terms of the dollar value of work accomplished. It represents the quantity, i.e., the value, of the work that is ahead of or behind schedule. In essence, it is an “accomplishment” variance.

Although the SV metric provides early insight into detail schedule conditions and overall schedule performance, it should not be the sole source for determining the contractor’s performance to schedule. Schedule variance does not clearly indicate whether scheduled milestones are being met since some work may have been performed out of sequence or ahead of schedule. Neither does SV indicate whether a completed activity is a critical event or if delays in an activity's completion will affect the completion date of the contract. A formal time-phased scheduling system, therefore, must be used to provide the means of determining the status of specific activities, milestones, and critical events. Additionally, other techniques, such as critical path analysis, may be better indicators of long-range time projections. However, a trend analysis of the changes in the SV metric can provide a valid and useful indication of current performance and near-term projections, as well as early identification of incipient cost problems.

7.5.2.8.1.2 Cost Variance (CV)

Cost performance is determined by comparing the actual cost of the work accomplished to the earned value for the same work scope, i.e., the budgeted cost of the work accomplished. The resultant metric is the Cost Variance (CV). The CV is a true measure of cost performance as it compares the actual cost incurred to the value of work accomplished. It thus eliminates the distortions inherent in a simple comparison of actual costs to a total budget.

Analysis of this difference reveals the factors contributing to the variances. These may include:

- poor initial estimate for the task
- technical difficulties that require additional resources
- cost of labor or materials different than planned

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- differences between planned and actual rates
- incorrect or inadequate selection of the earned value technique
- personnel efficiency different than planned (rate analysis and analysis of prime costs, i.e., labor hours, may be segregated to isolate rate changes and efficiency factors)

Variance At Completion (VAC) represents the amount of expected overrun (negative VAC) or under-run for the contract. It can be determined by taking the difference between the Budget At Completion (BAC) and the EAC [VAC = BAC – EAC]. Because it can be calculated at the CA level, in addition to the total contract level, it can serve as a useful metric for focusing management attention on the sources of cost performance problems. While this performance analysis involves examination of what has occurred, the focus should be on the control of current actions and assessment of future plans. The assessment of future plans should project when the remedial actions will be completed and its impact on schedule and EAC.

7.5.2.9 Estimates at Completion (EAC)

An EAC is determined by estimating the cost of the remaining work, or Estimate To Complete (ETC), and adding it to total costs incurred to date. A comprehensive EAC should be periodically developed at the CA level using all available information to arrive at the best possible estimate. This is done by:

- evaluating the efficiency achieved by performing organizations for completed work and comparing it to remaining budgets
- establishing a schedule forecast that reflects the expected timeframe for completing the remaining work
- considering all remaining risk areas on the program versus cost avoidance possibilities
- ensuring the most current direct and indirect rate structure is used to value the projected resources
- applying this analysis to future efforts to derive the most accurate estimate

The EAC should be the most likely estimate of the total costs for all authorized program efforts and should be time-phased in accordance with the expected completion dates on program schedules. The basis for the EAC and the reasons for changes from the last estimate should be identified.

Comparisons of this estimate to budgets for the associated effort must be made frequently enough for management to ensure program performance and resource availability will not be adversely impacted. Monthly maintenance of the CA level EAC by the CAM ensures that the EAC continuously reflects a valid projection of program costs.

The schedule for establishment and maintenance of EAC data depends on program management needs and overall company or corporate financial review requirements. A

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company should conduct periodic comprehensive EAC reassessments at least annually. Alternatively, a company should establish an ongoing process of EAC review and maintenance. In either case, significant EAC changes should be incorporated whenever they are identified.

7.5.2.10 Revisions and Data Maintenance

Changes in major programs are inevitable. This discussion addresses the controlled process whereby programs incorporate formal changes, conduct internal replanning, and adjust past, present, and future information to accommodate changes. The key is timeliness and control. The budget will change as contract changes are authorized and incorporated or as internal replanning actions are taken. Rate changes and economic price adjustments may also be made as appropriate. Changes to budgets in the current or past accounting periods should only be made for the correction of errors or the effects of contract negotiation.

Revisions to program plans must be carefully controlled. The PMB should reflect the current program management plan for accomplishment of program objectives. It must be up-to-date and should include all authorized changes. It is equally important that unauthorized changes are not introduced. Incorporating changes should not precipitate the elimination of existing cost and schedule variances (sometimes referred to as “single point adjustments”). If the maintenance of baseline plans is compromised, the value of information on management reports will be degraded.

7.5.2.10.1 Customer-Directed Changes

Customer-directed changes to the program can impact virtually all aspects of the internal planning and control system, such as organization structures, work authorizations, budgets, schedules, and EACs. The incorporation of authorized changes should be made in a timely manner and strictly controlled. This will ensure the PMB can be accurately maintained.

7.5.2.10.2 Traceability to Previous Budgets

The original budget established for the program should constitute a traceable basis against which program growth can be measured. The starting point or base on which these original budgets are built is the program target cost. This value increases or decreases only as a result of authorized changes. For definitized changes, the program target cost changes by the negotiated amount. For authorized work that has not been negotiated, or authorized unpriced work (AUW), the program target cost increases by the amount of cost estimated for that effort. After negotiations, the program target cost is adjusted to reflect the negotiation results. Adequate records of all changes should be maintained to provide the basis for reconciliation back to the original budgets assigned during the baselining process.

7.5.2.10.3 Control Internal Changes to the PMB

Future plans may significantly vary from the original baseline, and the PM may choose to realign scope, schedule, or budget. Some examples of when it may be appropriate to do

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internal replanning, i.e., within the program target cost or approved Total Allocated Budget (TAB), include:

- changes resulting from a Preliminary Design Review (PDR) or a Critical Design Review (CDR) that modify future requirements
- a major shift in the resource profile to accomplish the remaining effort
- funding restrictions or modifications that affect future resource availability
- rate changes that are significant enough to warrant replanning

Internal replanning is intended for in-scope changes to future budgets. The objective of internal replanning is to reflect a revised program plan. Changes to near-term effort (scheduled to start in the next accounting period) must be minimized.

Changes in the funding projections for a program may affect both the schedule and the cost for a program. The movement of budget to meet a new funding profile requires a reassessment of the schedule for the associated work. There may also be cost impact due to rate differences in the affected time periods.

7.5.2.10.4 Over Target Baseline (OTB) and Over Target Schedules (OTS)

During contract execution, the contractor may conclude that the budget or schedule for performing the remaining work is decidedly insufficient and no longer represents a realistic plan. At this point the contractor should prepare and submit a request to implement an OTB or OTS.

An OTB is a PMB that has been formally reprogrammed to include additional performance management budget in excess of the contract's negotiated cost. An OTB increases the performance budget without modifying the work scope or other constraints of the contract.

An OTS condition is created when the contractor re-plans the schedule to one that exceeds the contract milestones or delivery dates. This new schedule also becomes the basis for the performance budgets. While it is possible to have an OTS without a corresponding increase in cost, normally an OTS is accompanied by increased costs and therefore by an OTB.

Implementing an OTB or OTS is a major management decision for the contractor and requires government approval at the start of the process. Consequently, the PM should fully understand the concepts and processes. The PM should consider the factors discussed in section 2.5.2.4 of the DON EVMIG** when considering whether an OTB or OTS is appropriate for the contract and when evaluating the contractor's request.

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7.6 Contract Requirements

7.6.1 Evaluation

Evaluation of the contractor proposed EVMS is normally undertaken as part of the proposal evaluation process. This evaluation is an assessment to determine if the contractor's system meets the EIA-748 guidelines.

7.6.2 Contract Award

The contract award phase is primarily a Procuring Contracting Officer (PCO)/Program Office function that would include SUPSHIPs upon request. DFARS 252.234-7001 is the provision that provides Notice of EVMS and is included in the RFP for contracts that meet EVM application requirements. The offeror will either assert that the ACO has determined their EVMS to be acceptable or will provide a comprehensive plan for compliance with the EIA-748 guidelines. In accordance with DFARS PGI 234.201(2), the PCO shall obtain the assistance of the ACO in determining the adequacy of an EVMS plan that an offeror proposes for compliance with the EIA-748.

When EVM is required in a contract, the following sections of the contract will include EVM related requirements:

- Section C - Includes EVM in Statement of Work
- Section I - Includes EVMS FAR and DFARS Clauses
- Section J - Includes EVMS Data Items
    - Integrated Program Management Report (IPMR)
    - Integrated Program Management Data Analysis Report (IPMDAR)
    - Contract Performance Report (CPR)
    - Contract Work Breakdown Structure (CWBS)
- Section L - Includes EVMS descriptions in proposal
- Section M - Includes EVMS as an evaluation factor

The SOW tasks, FAR/DFARS contract clauses, and the CDRL items require the contractor to:

- use and maintain an EVMS that meets the EIA-748 guidelines
- notify the Government of any EVMS changes
- provide the Government with access to EVMS pertinent records and data
- require EVMS on selected subcontractors
- support a Government – Contractor IBR

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7.6.3 Post-Contract Award

Although the DON EVMIG describes a variety of post-contract award activities, including functions associated with contract administration, delivery, and contract closeout, the five primary EVM elements associated with post-contract award are:

- Contract Award Review/Contract Implementation Review
- EVM System Validation
- EVM System Surveillance
- Integrated Baseline Review
- Program Management Reviews

7.6.3.1 EVMS System Validation

DoD policy requires EVMS validation for all DoD EVM contracts of $100 million or greater. For shipbuilding contracts, this responsibility would typically fall on DCMA. Once a contractor's EVM system is validated, it may be applied to other contracts with EVMS requirements. EVMS validation determines that the EVMS:

- meets the intent of the EIA-748 guidelines
- is being used appropriately on the contract

7.6.3.2 Integrated Baseline Review (IBR)

The IBR is a joint risk assessment of the EVM PMB conducted by the Government PM, SUPSHIP, and the contractor. DoD acquisition policy and NAVSEAINST 7000.4H** require PMs to conduct IBRs on EVM contracts:

- within six months of contract award
- upon exercise of significant contract options
- upon incorporation of major modifications
- as otherwise agreed

7.6.4 Deficiencies in Validated EVM Systems

Deficiencies may be uncovered either in the EVM system processes or in the consistency and discipline of the validated processes. These deficiencies may be discovered during routine surveillance or during analysis of performance data. SUPSHIP should notify and consult with the PCO and EVMSS (SEA05C) if major deficiencies are identified. DON EVMIG, section 2.3.6, provides additional information regarding the process for correcting deficiencies and restoring compliance. This process is designed to provide the contractor an opportunity to correct deficiencies prior to formal withdrawal of the company's EVMS validation.

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The contractor's EVMS is considered to be a contractor business system as defined by DFARS. Qualifying contracts should include clauses 252.234-7002 Earned Value Management System and 252.242-7005 Contractor Business System. These clauses require the contractor to establish and maintain acceptable business systems in accordance with the terms and conditions of the contract. If a business system is found to have a significant deficiency, these clauses permit the withholding of contract payments. See SOM section 3.18 for more information.

Refer to NAVSEA letter Ser 022/007 - Contractor Business Systems Guidance of 28 Nov 2018** (NAVSEA Fusion access required), reference (r), and the NAVSEA SUPSHIP EVMS Surveillance Operating Procedure (May 2020)** (NAVSEA Fusion access required) for more information on SUPSHIP oversight of contractor EVM systems. Note that per reference (q), DCMA is the Cognizant Federal Agencies (CFAs) with audit responsibilities for contractor EVM systems.

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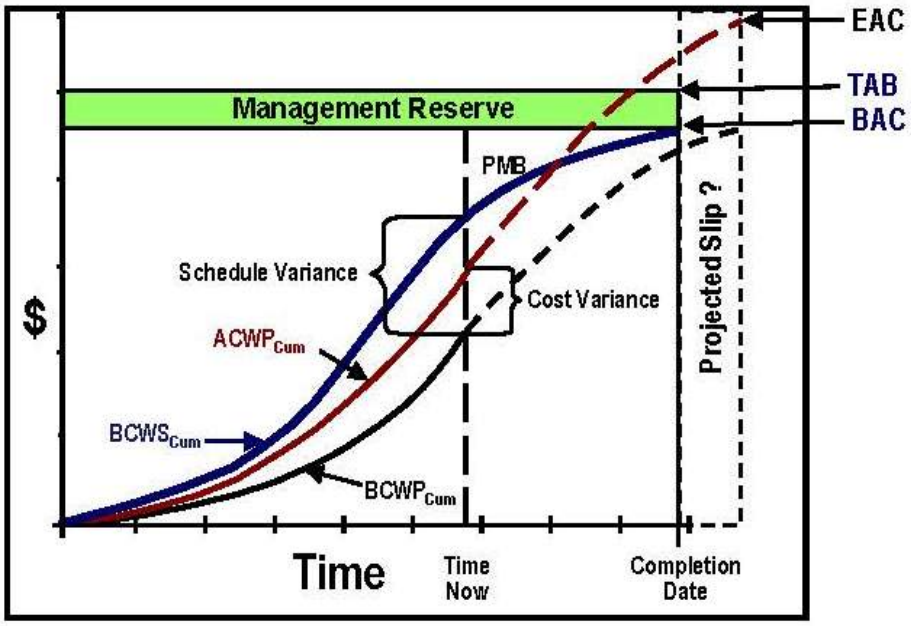
Appendix 7-A: Graphical Representation of EVMS Terms



VARIANCES Positive is Favorable, Negative is Unfavorable

Cost Variance	CV	= BCWP – ACWP
	CV %	= (CV / BCWP) * 100
Schedule Variance	SV	= BCWP – BCWS
	SV %	= (SV / BCWS) * 100
Variance at Completion	VAC	= BAC – EAC
	VAC %	= (VAC / BAC) * 100

OVERALL STATUS

% Schedule	= ($BCWS_{CUM}$ / BAC) * 100
% Complete	= ($BCWP_{CUM}$ / BAC) * 100
% Spent	= ($ACWP_{CUM}$ / BAC) * 100

EFFICIENCIES

Cost Efficiency	CPI	= BCWP / ACWP	Favorable is > 1.0, Unfavorable is < 1.0
Schedule Efficiency	SPI	= BCWP / BCWS	Favorable is > 1.0, Unfavorable is < 1.0

SCHEDULE METRICS (Selected)

BEI = Total Tasks Completed / (Total Tasks with Baseline Finish On or Prior to Current Report Period + Tasks without baseline finish dates)

Hit Task % = 100 * (Tasks in Denominator that Completed ON or Before Baseline Finish / Tasks Baselined to Finish within Current Report Period)

ESTIMATE @ COMPLETION = ACTUALS TO DATE + [(REMAINING WORK) / (PERFORMANCE FACTOR)]

EAC_{CPI} = $ACWP_{CUM}$ + [(BAC – $BCWP_{CUM}$) / CPI_{CUM}]

$EAC_{Composite}$ = $ACWP_{CUM}$ + [(BAC – $BCWP_{CUM}$) / (CPI_{CUM} * SPI_{CUM})]

TO COMPLETE PERFORMANCE INDEX (TCPI) § #

$TCPI_{Target}$ = Work Remaining / Cost Remaining = (BAC – $BCWP_{CUM}$) / (**Target** – $ACWP_{CUM}$)

§ To Determine the $TCPI_{for\ BAC,\ LRE,\ or\ EAC}$ Substitute TARGET with BAC, LRE, or EAC

To Determine the Contract Level TCPI for EAC, You May Replace BAC with TAB

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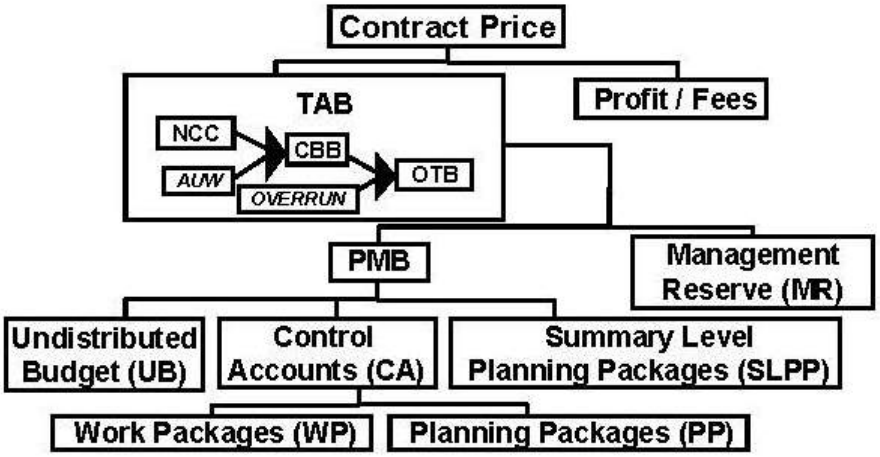

ACRONYMS

ACWP	Actual Cost of Work Performed	Cost actually incurred in accomplishing work performed **= ACTUAL COST**
AUW	Authorized Unpriced Work	Work contractually approved, but not yet negotiated / definitized
BAC	Budget At Completion	The sum of all budgets for the contract thru any given WBS/OBS level
BCWP	Budgeted Cost for Work Performed	Value of completed work in terms of the work's assigned budget **= EARNED VALUE**
BCWS	Budgeted Cost for Work Scheduled	Time-phased Budget Plan for work scheduled **= PLANNED VALUE**
CA	Control Account	Lowest CWBS element assigned to a single focal point to plan & control scope / schedule / budget
CBB	Contract Budget Base	Sum of NCC & AUW
EAC	Estimate At Completion	Estimate of total **Cost** for the contract thru any given level generated by Ktr, PMO, DCMA, etc. **= $EAC_{Ktr / PMO / DCMA}$**
ETC	Estimate to Complete	Estimate of the cost of remaining work
LRE	Latest Revised Estimate	Ktr's EAC or EAC_{Ktr}
MR	Management Reserve	Budget withheld by Ktr PM for unknowns / risk management
NCC	Negotiated Contract Cost	Contract **Price** Minus profit or fee(s)
OTB	Over Target Baseline	Sum of CBB + additional budget approved for remaining work
PAC	Price At Completion	EAC Plus Adjusted Profit or Fee(s)
PMB	Performance Measurement Baseline	Contract time-phased budget plan
PP	Planning Package	Far-term CA activities not yet defined into WPs
SLPP	Summary Level Planning Package	Far-term contract activities not yet assigned to a CA
TAB	Total Allocated Budget	Sum of all budgets for work on contract = NCC, CBB, or OTB
TCPI	To Complete Performance Index	Efficiency needed from 'time now' to achieve a Cost Target = BAC, LRE, or EAC
UB	Undistributed Budget	Broadly defined activities not yet time-phased for distribution to CAs or SLPPs
WP	Work Package	Near-term, detail-planned activities within a CA

EVM POLICY:

EVM in accordance with EIA-748 is required for cost or incentive contracts, subcontracts, intra-government work agreements, & other agreements valued > $20M (TY $).
Refer to the IPMDAR Implementation Guide for IPMDAR Tailoring Guidance.

DoD's EVM CONTRACTING REQUIREMENTS:

DFARS CLAUSES
252.234-7001 "NOTICE OF EVMS" FOR SOLICITATIONS
252.234-7002 "EVMS" FOR SOLICITATIONS & CONTRACTS
252.242-7005 "CONTRACTOR BUSINESS SYSTEMS" FOR SOLICITATIONS & CONTRACTS

Integrated Program Mngt Data and Analysis Report DI-MGMT-81861

INTEGRATED BASELINE REVIEW MANDATORY FOR ALL CONTRACTS THAT HAVE EVM INVOKED ON THE CONTRACT

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Appendix 7-B: Glossary

Actual Cost – The costs incurred and recorded in accomplishing work performed.

Actual Date - The date on which a milestone or scheduled work task is completed.

Apportioned Effort – Effort that by itself is not readily measured or divisible into discrete work packages, but which is related in direct proportion to the planning and performance on other measured effort.

Authorized Unpriced Work – The value of authorized work on the contract that has not yet been definitized.

Authorized Work – Effort (work scope) on contract or assigned by management.

Budget At Completion (BAC) – The total authorized budget for accomplishing the program scope of work. It is equal to the sum of all allocated budgets plus any undistributed budget. Management Reserve is not included. The BAC will form the Performance Measurement Baseline as it is allocated and time-phased in accordance with program schedule requirements.

Contract Budget Base (CBB) – The Negotiated Contract Cost (NCC) plus the cost of any authorized unpriced work.

Control Account – A management control point at which budgets (resource plans) and actual costs are accumulated and compared to earned value for management control purposes. A control account is a natural management point for planning and control since it represents the work assigned to one responsible organizational element on one program work breakdown structure element.

Cost Variance – A metric for the cost performance on a program. It is the algebraic difference between earned value and actual cost (Cost Variance = Earned Value – Actual Cost). A positive value indicates a favorable position and a negative value indicates an unfavorable condition.

Critical Path – In a schedule network, the sequence of discrete work packages, planning packages, and lower-level tasks and activities in the network that has the longest total duration through to a milestone (e.g., critical path to undocking) or to project completion.

Direct Costs – The costs of resources expended in the accomplishment of work which are directly charged to the affected program.

Discrete Effort – Tasks that are related to the completion of specific end products or services and can be directly planned and measured. (May also be known as work packaged effort.)

Due Date – The date by which a milestone or task is scheduled to be completed.

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Earned Value – The value of completed work expressed in terms of the budget assigned to that work.

Estimate At Completion (EAC) – The current estimated total cost for program authorized work. It equals the actual cost to a point in time plus the estimated costs to completion (Estimate To Complete).

Estimate To Complete (ETC) – Estimate of costs to complete all work from a point in time to the end of the program.

Estimated Completion Date (ECD) – The date on which a scheduled milestone or task is currently expected to complete.

Estimated Cost – An anticipated cost for specified work scope.

Indirect Cost – The cost for common or joint objectives that cannot be identified specifically with a particular program or activity. Also referred to as overhead cost or burden.

Internal Replanning – Replanning actions for remaining work scope. A normal program control process accomplished within scope, schedule, and cost objectives of the program.

Level of Effort – Unmeasured effort of a general or supportive nature usually without a deliverable end product. Examples are supervision and program administration.

Management Reserve – An amount of the total budget withheld for management control purposes rather than being designated for the accomplishment of a specific task or set of tasks.

Milestone – A schedule event marking the due date for accomplishment of a specified effort (work scope) or objective. A milestone may mark the start, an interim step, or the end of one or more activities.

Near Critical Path – In a schedule network, a sequence of lowest float or slack paths of discrete work packages, planning packages, and lower level tasks and activities that has the longest total duration nearest to the critical path.

Network or Network Schedule – A schedule format in which the activities and milestones are represented along with interdependencies between activities. It expresses the logic of how the program will be accomplished. Network schedules are the basis for critical path analysis, a method for identification and assessment of schedule priorities and impacts.

Organizational Structure – The hierarchal arrangement for the management organization for a program, graphically depicting the reporting relationships. The organizational structure will be by work team, function, or whatever organization units are used by the company.

Other Direct Costs – Usually the remaining direct costs, other than labor and material, such as travel and computer costs.

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Over Target Baseline (OTB) - Replanning actions involving the establishment of cost or schedule objectives that exceed the desired or contractual objectives of the program. An OTB is a recovery plan, a new baseline for management when the original objectives cannot be met and new goals are needed for management purposes.

Over Targe Schedule (OTS) - A replanned schedule baseline that extends beyond the contract milestones or delivery dates. An OTS is usually accompanied by an increase in budgets resulting in a corresponding Over Target Baseline (OTB).

Performance Measurement Baseline – The total time-phased budget plan against which program performance is measured. It is the schedule for expenditure of the resources allocated to accomplish program scope and schedule objectives and is formed by the budget assigned to control accounts and applicable indirect budgets. The Performance Measurement Baseline also includes budget for future effort assigned to higher work breakdown structure levels (summary level planning packages) plus any undistributed budget. Management Reserve is not included in the baseline as it is not yet designated for specific work scope.

Performing Organization – The organization unit that applies resources to accomplish assigned work.

Planned Value – The budgeted value of the scheduled work.

Planning Package – A logical aggregation of work, usually future efforts that can be identified and budgeted, but which is not yet planned in detail at the work package or task level.

Program Budget – The total budget for the program including all allocated budget, management reserve, and undistributed budget.

Program Target Cost – The program cost objective based on the negotiated contract costs, or the management goal value of the authorized work, plus the estimated cost of authorized unpriced work.

Resource Plan – The time-phased budget which is the schedule for the planned expenditure of program resources for the accomplishment of program work scope.

Responsible Organization – The organizational unit responsible for the accomplishment of assigned work scope.

Schedule – A plan that defines when specified work must be done to accomplish program objectives on time.

Schedule Traceability – Compatibility among schedule due dates, status, and work scope requirements at all levels of schedule detail (vertical traceability) and between schedules at the same level of detail (horizontal traceability).

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Schedule Variance – A metric for the schedule performance of a program. It is the algebraic difference between earned value and planned value (Schedule Variance = Earned Value – Planned Value). A positive value is a favorable condition while a negative value is unfavorable.

Statement of Work (SOW) – The document that defines the work scope requirements for a program.

Total Allocated Budget – The Contract Budget Base (CBB) plus any amount of OTB that has been applied for performance measurement.

Undefinitized Work – Authorized work for which a firm contract value has not been negotiated or otherwise determined.

Undistributed Budget – Budget associated with specific work scope or contract changes that have not been assigned to a control account or summary level planning package.

Work Breakdown Structure – A product-oriented division of program tasks depicting the breakdown of work scope for work authorization, tracking, and reporting purposes.

Work Breakdown Structure Dictionary – A listing of work breakdown structure elements with a description of the work scope content in each element. The work descriptions are normally summary level and provide for clear segregation of work for work authorization and accounting purposes.

Work Package – A task or set of tasks performed within a control account.

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Appendix 7-C: Acronyms

AC	Actual Cost
ACAT	Acquisition Category
ACO	Administrative Contracting Officer
ACWP	Actual Cost of Work Performed
ASN(RD&A)	Assistant Secretary of the Navy (Research, Development & Acquisition)
AUW	Authorized Unpriced Work
BAC	Budget at Completion
BCWP	Budgeted Cost for Work Performed
BCWS	Budgeted Cost for Work Scheduled
CFSR	Contract Funds Status Report
CA	Control Account
CAM	Control Account Manager
CAO	Contract Administration Office
CBB	Contract Budget Base
CDR	Critical Design Review
CDRL	Contract Data Requirements List
CEVM	Navy Center for Earned Value Management
CFR	Code of Federal Regulations
CPR	Contract Performance Reports
CR	Compliance Review
CSDR	Cost and Software Data Reporting
CV	Cost Variance

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CWBS	Contract Work Breakdown Structure
DAES	Defense Acquisition Executive Summary
DCMA	Defense Contract Management Agency
DFARS	Defense Federal Acquisition Regulation Supplement
DFARS PGI	DFARS Procedures, Guidance and Information
DoD	Department of Defense
EIA	Electronic Industries Alliance
DoD EVMSIG	Department of Defense Earned Value Management System Interpretation Guide
DoDI	Department of Defense Instruction
DON EVMIG	Department of the Navy Earned Value Management Implementation Guide
EAC	Estimate at Completion
ETC	Estimate to Complete
EVM	Earned Value Management
EVMS	Earned Value Management System
EVMSS	Earned Value Management Support Staff
EVT	Earned Value Technique
FAR	Federal Acquisition Regulations
IBR	Integrated Baseline Review
IMP	Integrated Master Plan
IMS	Integrated Master Schedule
IPM	Integrated Program Management
IPMR	Integrated Program Management Report
IPMDAR	Integrated Program Management Data Analysis Report
IPT	Integrated Product Team

** Denotes hyperlink requiring CAC/NMCI access

JSON	JavaScript Object Notation
KPP	Key Performance Parameter
LOE	Level of Effort
MOA	Memorandum of Agreement
MR	Management Reserve
NAVSEA	Naval Sea Systems Command
NAVSEAINST	Naval Sea Systems Command Instruction
NCC	Negotiated Contract Cost
NTE	Not to Exceed
OBS	Organizational Breakdown Structure
OTB	Over Target Baseline
OTS	Over Target Schedule
OUSD	Office of Undersecretary of Defense
PCO	Procuring Contracting Officer
PDR	Preliminary Design Review
PEO	Program Executive Office
PERT	Program Evaluation Review Technique
PM	Program Manager
PMB	Performance Measurement Baseline
PMO	Program Management Office
PP	Planning Package
PSP	Procurement Surveillance Program
PV	Planned Value
RFP	Request for Proposal

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SDM	Ship Design Manager
SLPP	Summary Level Planning Package
SME	Subject Matter Expert
SOM	SUPSHIP Operations Manual
SOP	Surveillance Operating Procedure
SOW	Statement of Work
SUPSHIP	Supervisor of Shipbuilding, Conversion and Repair, USN
SV	Schedule Variance
TAB	Total Allocated Budget
TCPI	To Complete Performance Index
TPM	Technical Performance Measure
UB	Undistributed Budget
VAC	Variance at Completion
WBS	Work Breakdown Structure
WP	Work Package
XML	Extensible Markup Language

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