DEPARTMENT OF DEFENSE EARNED VALUE MANAGEMENT SYSTEM INTERPRETATION GUIDE (EVMSIG)

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FOREWORD

Earned Value Management (EVM) is one of the Department of Defense's and industry's most powerful program management tools. Government and industry program managers utilize EVM to assess cost, schedule, and technical progress on programs to support joint situational awareness and informed decision-making. To be effective, EVM practices and competencies must integrate into the program manager's acquisition decision-making process. The data provided by the EVM System (EVMS) is timely, accurate, reliable, and auditable. Industry must implement the EVMS in a disciplined manner consistent with the 27 Guidelines contained in the Electronic Industries Alliance Standard-748 EVMS (EIA-748) (Reference (a)), hereinafter referred to as "the 27 Guidelines."

The Office of Acquisition Policy and Innovation (API) is accountable for EVM policy, oversight, and governance across the Department of Defense (DoD). API's objective for the DoD EVMS Interpretation Guide (EVMSIG) is to improve the effectiveness of EVM across the Department. The DoD EVMSIG is used as the basis for the DoD to assess EVMS compliance with the 27 Guidelines. This revision, as with the original document dated February 2015, was developed in collaboration with DoD EVMS experts from the Office of the Secretary of Defense and the organizations responsible for conducting EVMS compliance reviews (i.e., the Defense Contract Management Agency, Intelligence Community, and Navy Shipbuilding).

The following strategies underlie the content of this policy:

- Reduce the implementation burden associated with demonstrating compliance with the 27 Guidelines by promoting consistent application of EVMS compliance assessments across DoD.
- Emphasize the need to establish clear and measurable technical objectives for baseline planning, performance measurement, and management.
- Establish an understanding of how the implementation of program-unique management practices and techniques can be consistent with broader EVMS guideline characteristics that support compliance.
- Establish an understanding for Industry Partner EVMS ownership and self-governance with continued compliance to the 27 Guidelines.

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1 INTRODUCTION

1.1 PURPOSE OF GUIDE

Earned Value Management (EVM) is a widely accepted industry best practice for program management, used across the Department of Defense (DoD), the Federal Government, and the commercial sector. Government and industry program managers use EVM as a program management tool to provide joint situational awareness of program status and to assess the cost, schedule, and technical performance of programs for proactive course correction. An EVM System (EVMS) is the management control system that integrates a program's work scope, schedule, and budget for optimum program planning and control.

The DoD EVMS Interpretation Guide (EVMSIG) provides the overarching DoD interpretation of the 27 Guidelines where an EVMS requirement is applied. It serves as the authoritative source for EVMS interpretive guidance and is used as the basis for the DoD to assess EVMS compliance with the 27 Guidelines. EVMSIG provides the DoD Strategic Intent behind each guideline for a compliant EVMS. As applicable, the DoD Strategic Intent section may clarify where differences in guideline interpretation exist for development and production type work. DoD agencies and organizations charged with conducting initial and continuing EVMS compliance activities will establish amplifying agency procedures and guidance to clarify how they are implementing this Guide to include the development of evaluation methods for ensuring compliance with the 27 Guidelines. Note: Contractors may use this guide to inform their internal processes and practices (e.g., EVM System Description).

1.2 EVM POLICY

The Office of Management and Budget Circular No. A-11 (Reference (b)) and the Federal Acquisition Regulation (FAR) Subpart 34.2 and Parts 234 and 52 (References (c) through (f)) require federal Government agency contractors to establish, maintain, and use an EVMS that is compliant with the 27 Guidelines on all major capital asset acquisitions. Based on these federal regulations and the DoD Instruction 5000.85 (DoDI 5000.85) (Reference (g)), the DoD established the Defense Federal Acquisition Regulation Supplement (DFARS) 234.2 (Reference (h)), which prescribes the application of a compliant EVMS, via the DFARS 252.234-7999 EVMS clause (Reference (i)). When EVM reporting is contractually required, the contractor must submit to the Government an Integrated Program Management Data and Analysis Report (IPMDAR) (DI-MGMT-81861C, latest revision, or as specified by contract) (Reference (j)) to report program cost and schedule performance data. Hereinafter, the term "IPMDAR" is used to reference current IPMDAR reporting or legacy and ongoing Integrated Program Management Report (IPMR) or Contract Performance Report/Integrated Master Schedule (CPR/IMS) data item descriptions (DIDs). There are times in this Guide when the IMS reference is to an output of the contractor's internal management system, i.e., a work product, not necessarily associated with the schedule components (Native Schedule File, Data Dictionary, and Schedule Performance Dataset (SPD)) within the IPMDAR.

In accordance with the DoD Instruction 5000.85 (Reference (g)), multiple disciplines in the acquisition community will use EVM to ensure sound planning and resourcing of all tasks required for contract performance and to manage program cost, schedule, and technical performance.

DFARS 234.2 (Reference (h)) requires contractors to use an EVMS that is compliant with the 27 Guidelines. When DoD is the Cognizant Federal Agency, the Defense Contract Management Agency (DCMA) is responsible for determining EVMS compliance. The procuring contracting officer does not retain this function. (DFARS Subpart 242.302 (a)(S-71), (Reference (k)). As structured within the DoD, the Navy Supervisor of Shipbuilding (SUPSHIP) has the responsibility and authority to conduct EVMS ongoing compliance activities, and the requirement to coordinate with DCMA, Naval Sea Systems Command (NAVSEA) headquarters, and other stakeholders, for the contracts under the SUPSHIP's cognizance. For contracts issued by an Intelligence Community (IC) Agency, the compliance responsibility resides with the IC Agency applying its acquisition authority. In accordance with Under Secretary of Defense Memorandums (References (l) and (m)), DoD Components in the IC are exempt from delegating EVMS review authorities to DCMA.

1.3 EVMS COMPLIANCE

A properly implemented EVMS will provide internal controls with documented, formal program management processes for managing acquisition within the DoD as required. These controls and processes will ensure both contractor and government program managers, as well as other government stakeholders, receive contract performance data that:

- Relates time-phased budgets to corresponding scope of work.
- Objectively measures work progress.
- Reflects achievement of program objectives within budget, on schedule, and within technical performance parameters.
- Allows for informed decisions and corrective action.
- Is timely, accurate, reliable, and auditable.
- Supplies managers at all levels with appropriate program status information.
- Is derived from the same EVMS the contractor uses to manage the contract.
- Enable timely and reliable Estimates at Completion (EAC).

The contractor's business processes should include the routine use of generally accepted management best practices and typical business management systems. Adding the EVM requirement to established program management business disciplines should not necessitate a major reorganization or refitting of current processes. Contractors are expected to implement an EVMS by leveraging existing management processes and tools already used to conduct business.

The DoD requires formal documentation of the management system and processes (i.e., tools, techniques, and procedures) used by the contractor's program management staff. To address this requirement, the contractor maintains a stand-alone EVM System Description (SD) or a set or series of integrated process descriptions/procedures that describe their approach to a compliant EVMS. This documentation will describe how the contractor's business processes, and associated data/work products, meet the intent of the 27 Guidelines. The typical work products identified in this guide summarize the type of documentation or system inputs/outputs needed for, or resulting from, the integration of subsystems and processes that a contractor may use to manage their programs effectively.

Contractors are expected to document, explain, and demonstrate how the integrated parts of the EVMS are used to comply with the 27 Guidelines. There are three steps for determining compliance:

- Assess whether the contractor's EVM System Description adequately documents the processes and procedures which support how its system meets the intent of the 27 Guidelines.
- Evaluate the contractor's ability to demonstrate the EVMS implementation as described in the System Description and supplemental procedures.
- Ensure the EVMS is providing timely, accurate, reliable, and auditable data.

When contractually required, contractors are required to demonstrate compliance with the 27 Guidelines, regardless of EVM reporting requirements defined in the contractual Contract Data Requirements List (CDRL),

The flowdown of an EVMS requirement to a subcontractor, hereby referred to as a major subcontractor, requires special consideration to ensure subcontractor compliance with the 27 Guidelines and for the prime contractor to incorporate subcontractor EVMS data into its EVMS. It is incumbent upon the prime contractor to document and demonstrate an effective methodology for managing the integrating subcontractor's data into their EVMS.

The term, "Subcontractors" includes inter-company work agreements whose planning, execution, and reporting of scope and schedule are independent of the prime. Inter-company work scope and schedule whose daily operations are under the direct management control of the prime and are directly integrated into the prime effort are not considered a subcontract. The criteria for determining a subcontractor or directly integrated approach for inter-company work should be documented in the contractor's system description.

1.4 CONTENT AND FORMAT OF GUIDE

The EVMSIG contains eight sections. Section 1.0, the Introduction, provides the purpose of the guide, an overview of EVM policy, a brief description of EVMS compliance assessments, and a synopsis of the overall content and format of the guide.

Sections 2.0 through 6.0 contain the 27 Guidelines in five categories:

- Section 2.0 Organization – Guidelines 1 through 4
- Section 3.0 Planning, Scheduling, and Budgeting – Guidelines 5 through 13
- Section 4.0 Progress Assessment and Data Collection – Guidelines 14 through 16
- Section 5.0 Analysis and Management Reports – Guidelines 17 through 23, and
- Section 6.0 Revisions and Data Maintenance – Guidelines 24 through 27.

These sections provide guideline interpretations. Each section describes the purpose, management value, strategic intent, attributes, and typical work products of the guidelines in that category. The work products included for each guideline are not intended to be all-inclusive. The terminology referenced for the products is representative of a typical EVMS output. In some instances, the work product could be a process or EVMS subsystem mapping document. The format for providing the guideline interpretations and a brief description of what each topic relays about the

guideline is shown below. This guide uses terms to create a framework for the Government to evaluate EVM systems. However, contractors' system descriptions may contain language that differs from the terms in this guide. Government evaluators should allow industry latitude to apply unique language in their system descriptions if it satisfies the intent.

DoD EVMSIG Guideline Format:

EVMS Category: *Describes the EVMS Category.*

EIA Standard Guideline: *Displays the EIA Standard Guideline section number. Displays the guideline language as published in Section 2 of the EIA-748.*

DoD Strategic Intent

Purpose of Guideline: *Concise description of why the guideline exists.*

Management Value: *Description of how the guideline contributes to program management. It describes how program management will benefit from proper implementation of the guideline and, conversely, may provide the impact of non-compliance.*

Intent of Guideline: *Management system characteristics and objectives in the design and implementation of an EVMS. Provides information needed to understand expectations for implementing an effective EVMS.*

Attributes

Qualities of an effective EVMS as a result of implementing that particular guideline in compliance with the EIA-748.

Typical Work Products

Listing of the typical work products used for determining compliance with the specific guideline. The contractor's processes, described in its EVM System Description, are the basis for the actual artifacts and documentation from the system. The work products referenced in this guide are typical products that may vary based upon how the contractor integrates their processes and may differ from contractor to contractor both in name and content.

Section 7.0, the Glossary, contains acronyms and definitions for specific EVM-related terms used in this Guide. Section 8.0, References, contains a list of the regulations, guidebooks, and policy documents cited in this Guide.

2 EVMS GUIDELINES: ORGANIZATION CATEGORY (Guidelines 1 through 4)

The Organization category focuses on the fundamental preparations for executing the program technical objectives to ensure effective management control of the program. The primary objectives of the four guidelines (1 through 4) are to establish the basic framework for capturing all contractually authorized work to be accomplished, identify the program organization hierarchy responsible for accomplishing that work, and create a structure that integrates all subsystems allowing for management control of all effort.

A structured approach for decomposing the program work into manageable segments creates the Work Breakdown Structure (WBS) (Guideline 1) wherein each WBS element contains a specific scope of work. The work is typically defined in the WBS Dictionary and includes a description of the technical content for each element. The WBS also provides the basic structure for program management and reporting of contract status. The program establishes an organizational structure and an Organization Breakdown Structure (OBS) which identifies managers responsible for work accomplishment (Guideline 2). This includes identifying major subcontractors and associated managers.

The assignment of organizational elements to specific WBS elements establishes the control accounts, which are the primary management control points for work authorization, budgeting, cost accumulation and performance measurement (Guideline 3). Through the creation of control accounts, the program manager communicates who (i.e., the Control Account Manager (CAM)) in the organization is given authority and responsibility to manage, control, and facilitate the allocation of resources to accomplish a specific scope of work. The CAM is responsible for the cost, schedule, and technical performance associated with accomplishing the scope of work within a control account. The CAM is also responsible for planning the resources necessary to accomplish that scope of work. In some cases, such as in a production environment, other functional organizations (e.g., Planning, Business Operations, etc.) may assume a more active role in the planning and management of resources in support of the CAM's responsibilities. In this scenario, effective internal bilateral communication between the CAM and the functional organizations is essential to ensure accomplishment of the CAM's responsibility for managing the execution of the control account scope of work.

The guidelines in the Organization category require the use of a fully integrated management system to execute the contract. The planning, scheduling, budgeting, work authorization, and cost accumulation management subsystems must integrate within the Earned Value management System (EVMS) such that the data derived from one system is relatable to and consistent with the data of each of the other systems. The proper integration of the EVMS subsystems ensures the information and performance data retrieved from the EVMS is timely, accurate, reliable, and auditable (Guideline 4).

Subsections 2.1 through 2.4 describe DoD's interpretation of the intent of each of the four Organization guidelines and expectations for implementing each guideline.

2.1 GUIDELINE 1: DEFINE THE WORK BREAKDOWN STRUCTURE

EVMS Category: Organization

EIA Standard Guideline: 2.1a

Define the authorized work elements for the program. A product-oriented work breakdown structure, tailored for effective internal management control, is commonly used in this process.

DoD Strategic Intent

Purpose of Guideline: To provide a structured approach for defining and segregating the contracted work scope to support effective management and control of the program.

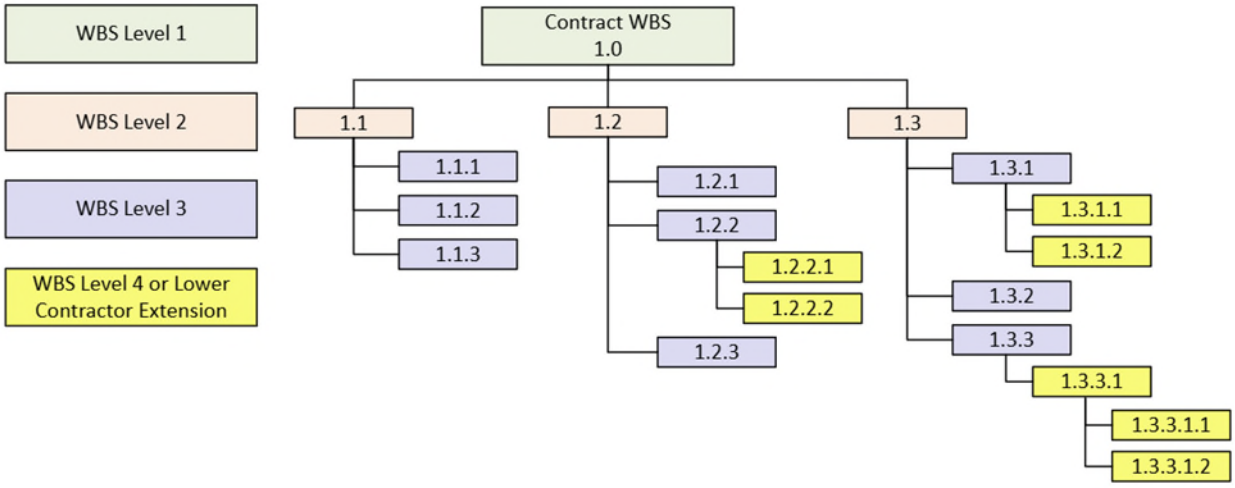
Management Value: The use of a product-oriented Work Breakdown Structure (WBS) facilitates communication between the Government and the Contractor and helps ensure the entire scope of work is captured, defined, and subsequently allocated to the organizations responsible for the performance of the work. It facilitates data collection and traceability and provides a control framework for integrated program management, work authorization, tracking, and reporting purposes.

Intent of Guideline: The complete and proper identification of all contractually authorized work to be accomplished on a program helps ensure resources are correctly identified, and that work is planned within the authorized program schedule. The use of a WBS facilitates this objective. The WBS is a product-oriented, hierarchical breakdown of the program requirements. The WBS includes all program elements (e.g., hardware, software, services, data, or facilities) and is decomposed to lower levels for planning, budgeting, scheduling, cost accounting, work authorization, measuring progress, and management control purposes (see Figure 1: Example Contract WBS). The WBS must also include all subcontracted work scope.

A well-developed WBS provides the program manager with a framework that defines all contract work scope (e.g., Statement of Work, Design Build Specifications, etc.) and technical criteria. The WBS is defined, developed, and maintained throughout the system life cycle based on a disciplined application of the systems engineering process for program management execution. In all cases, the contractor must extend the contract WBS to a level needed for effective internal management control. This should not be an arbitrary level established across the program. A WBS dictionary is typically used to describe the work scope.

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 other than the WBS used in the Earned Value Management System (EVMS) for program management.

Figure 1: Example Contract Work Breakdown Structure (CWBS)



Note: The notional graphic is not intended to indicate limits on the extension on the CWBS for contractor execution

Attributes

- A single product-oriented WBS is used for a given contract and extends to the level necessary for management action.
- The WBS comprises all contract work scope, including subcontracted and inter-company scope, to levels needed for effective internal management control.

Typical Work Products

- Statement of Work (SOW)
- Work Breakdown Structure
- Traceability matrix from government requirements (e.g., SOW, Build Specifications) to WBS
- WBS index/dictionary
- Integrated Program Management Data and Analysis Report
- Base contract and modifications

2.2 GUIDELINE 2: DEFINE PROGRAM ORGANIZATIONAL BREAKDOWN STRUCTURE

EVMS Category: Organization

EIA Standard Guideline: 2.1b

Identify the program organizational structure, including the major subcontractors, responsible for accomplishing the authorized work and define the organizational elements where work will be planned and controlled.

DoD Strategic Intent

Purpose of Guideline: To ensure the program manager identifies the appropriate program organizations responsible for accomplishing program work scope known as the organizational structure. The hierarchical alpha-numeric unique coding of the organization structure results in the Organizational Breakdown Structure (OBS).

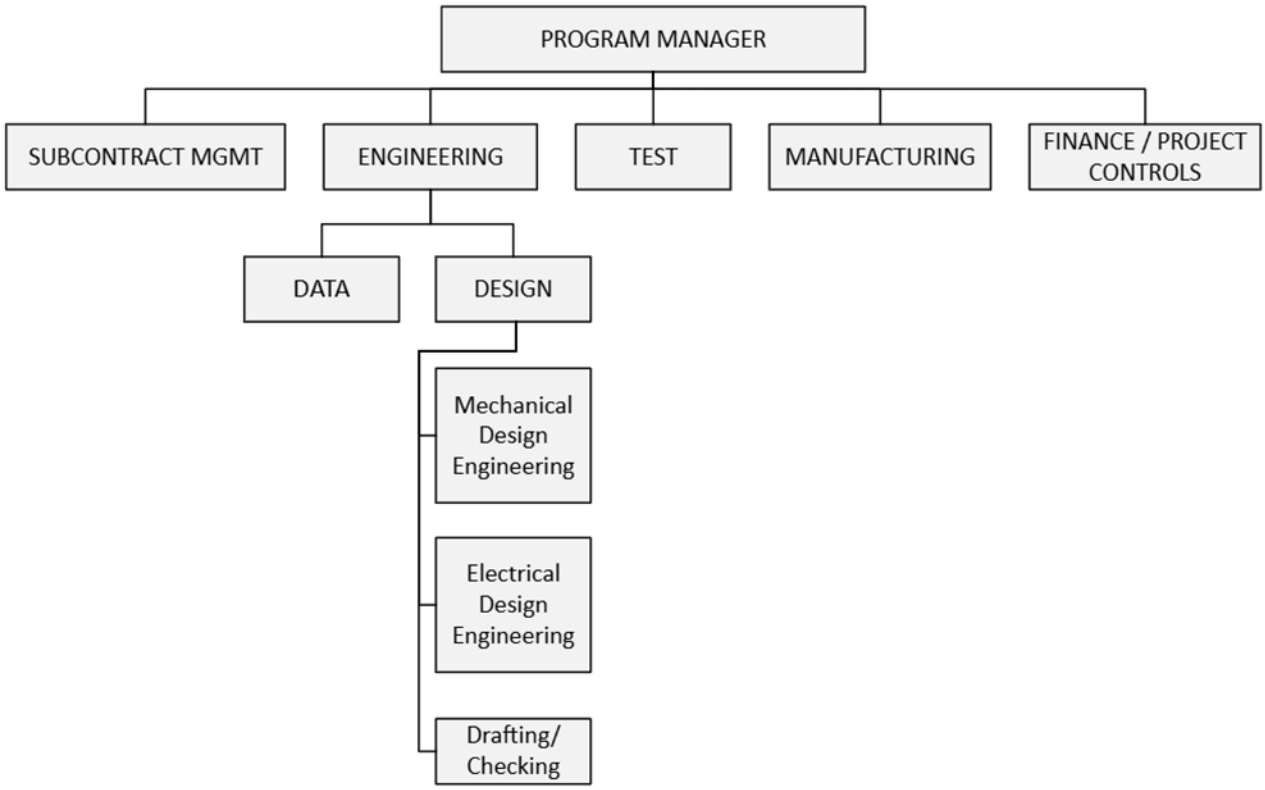
Management Value: An effective program organization, defined by the contractor PM at the onset of the contract, enhances management control of cost, schedule, and technical execution. Establishing and maintaining the organizational structure helps management focus on forming the most efficient organization by taking into consideration availability and capability of management and technical staff, including subcontractors, to achieve the program objectives.

Intent of Guideline: The organizational structure displays the organizational relationships that are responsible for managing resources assigned to a program. It identifies which managers in the contractor's program organizational structure are responsible for executing a specific scope of work consistent with their internal organizational structure of departments, units, teams, and major subcontractors. The program manager establishes a program organizational structure to reflect the assignment of management accountability and authority for all work supporting program objectives. The organizational structure is a direct representation of this hierarchy, as defined by the OBS, and describes the organization's roles and responsibilities for each segment of work, including major subcontracted and inter-company work efforts.

There are multiple types of program organizations (e.g., program teams, project matrix organizations, Integrated Product Teams (IPTs), functional organizations, etc.). When designating the internal organization responsible for managing the program efforts, the contractor must assign a program manager with sufficient authority and responsibility to ensure the performance of the authorized work. The manager assigned to subcontractor work must have full responsibility for the authorized work. Figure 2 illustrates an example of an organizational structure; however, there are multiple methods for developing this structure.

The hierarchical organization structure with uniquely defined nomenclature results in the Organizational Breakdown Structure (OBS), which facilitates the framework for program management (see Guideline 4).

Figure 2: Example Program Organizational Structure



Note: Figure is notional; there are multiple ways to structure an organization to manage a program.

Attributes

- A single organizational structure exists that contains all of the organizational elements as defined by the OBS, including major subcontractors and inter-company work, necessary to execute the contract.
- The OBS is defined with uniquely defined nomenclature

Typical Work Products

- Program Organizational Chart / organizational structure (to include functional management when applicable)
- Organizational Breakdown Structure
- Documented Roles and Responsibilities (prime, inter-company work, and major subcontractor(s))
- List of major subcontractors/inter-company work agreements with Earned Value Management System flowdown
- Integrated Program Management Data and Analysis Report

2.3 GUIDELINE 3: INTEGRATE WBS AND OBS TO CREATE CONTROL ACCOUNTS

EVMS Category: Organization

EIA Standard Guideline: 2.1c

Integrate the program work breakdown structure and organizational structure to identify management control points where responsibility is assigned to specific work scope.

DoD Strategic Intent

Purpose of Guideline: To determine responsibility for a specific scope of work and facilitate schedule and cost performance measurement in an Earned Value Management System (EVMS). The intersection of the Work Breakdown Structure (WBS) and the Organizational Breakdown Structure (OBS) is the point at which the control accounts are established and is the focal point for work authorization, management, and performance measurement.

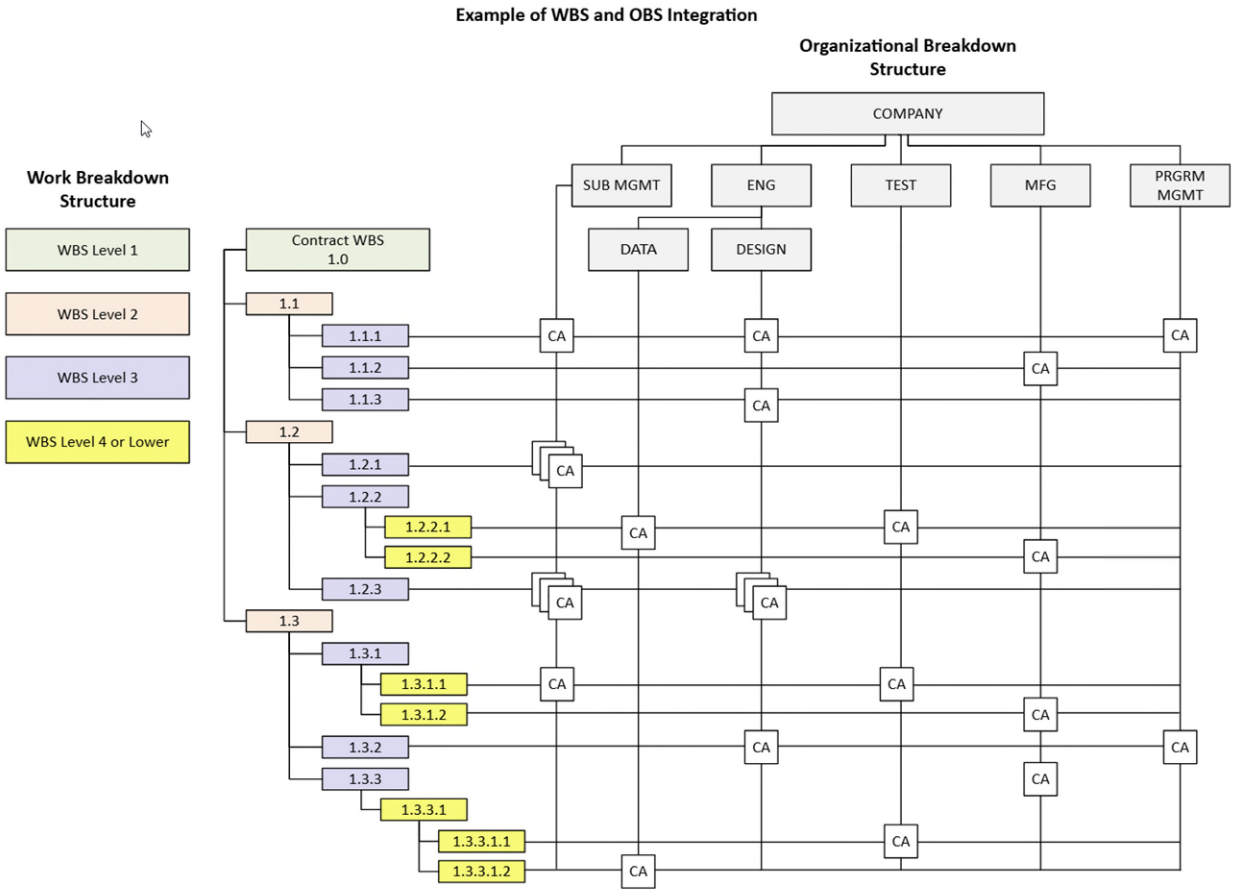
Management Value: The careful establishment of the control account structure ensures the proper level of management where one organization has clear responsibility for the effort. Establishment of control accounts should consider the complexity of the work and the efficiency of the organization. Control accounts are the optimal points in the Earned Value Management System (EVMS) where managerial control, performance measurement, and responsibility for corrective action exist.

Intent of Guideline: The intersection of the lowest level WBS element and the OBS is the point at which control account(s) are established. That intersection is necessary to understand the assigned responsibility for managing, controlling, and facilitating the allocation of resources to the work scope and permits cost accumulation and performance measurement (see Figure 3: Example Integration of the WBS and OBS). For management control purposes, there may be one or more responsible organizations supporting a single WBS or multiple control accounts within one OBS element driven by scope and exit criteria (i.e., completion of the effort).

Establishment of control accounts should consider the complexity of the work and the efficiency of the organization. Accordingly, Control Accounts should not be arbitrarily established at a single WBS level across the program. This structured approach assists the program manager with assigning responsibility and authority for performing the work scope contained in the WBS. Each control account has a corresponding Control Account Manager (CAM), who is responsible for ensuring the accomplishment of work in the control account and is the focal point of management control. Through a coding structure, control accounts have unique identifiers (UIDs) enabling inter-relationships between the budgeting, scheduling and cost accumulation processes (charge numbers) which ensure correct assignment within a single WBS element and organizational structure (see Guidelines 4, 5, and 15).

For scope that cannot practically be identified to a control account, it is permissible to establish a Summary Level Planning Package (SLPP) above the control account level with the assignment of an SLPP manager (see Guidelines 8 and 20).

Figure 3: Example Integration of the WBS and OBS



Note: Not all control accounts are at same WBS level as depicted in this notional example.

Attributes

- Each control account is assigned to a single organizational element directly responsible for the work identifiable to a single element of the WBS. One or more control accounts are visible at the intersection of the WBS and OBS.

Typical Work Products

- Responsibility assignment matrix
- Management reports from cost tool

2.4 GUIDELINE 4: INTEGRATE SUBSIDIARY MANAGEMENT PROCESSES

EVMS Category: Organization

EIA Standard Guideline: 2.1d

Provide for the integration of the scheduling, budgeting, work authorization, and cost accumulation processes with each other and, as appropriate, the program work breakdown structure and organizational structure to enable cost and performance measurement by elements of either or both structures.

DoD Strategic Intent

Purpose of Guideline: To ensure the contractor establishes an interconnection among the contractor's enterprise management systems (e.g., accounting, scheduling, estimating, procurement, Manufacturing/Enterprise Resource Planning (M/ERP) System, time card management systems, etc.) into an integrated framework required for effective program management.

Management Value: The integration of planning, scheduling, budgeting, work authorization, and cost accumulation management processes provides the capability for establishing the Performance Measurement Baseline (PMB), identifying work progress, and collecting actual costs, thereby facilitating management analysis and corrective actions. Having integrated management systems and common data elements helps ensure availability of reliable program information to support all levels of management insight and control.

Intent of Guideline: The integration of separate and interdependent management systems, processes, and operating procedures enables consistent and relatable data across the enterprise management systems and the Earned Value Management System (EVMS). Through coding structures that use unique identifiers (UIDs) and common data elements or a simple mapping method, the contractor's planning, scheduling, budgeting, work authorization, and cost accumulation processes are integrated. This will allow the data derived from one system to relate to and be consistent with the data of each of the other systems at the level established by the unique coding and/or charge number level through the total contract level (see Guideline 9 for work package / planning package identifiers). Contractors in production environments commonly employ an M/ERP System for planning, scheduling, dispatching/authorizing, and statusing work. Unique coding structures are established to interface between the material control system and the EVMS to support the transfer of data. The resulting integration of cost, schedule, and technical data enables program management to manage and control the execution of the program work scope effectively. The system must integrate subcontractor data.

Attributes

- The planning, scheduling, budgeting, work authorization, and cost accumulation subsystems are integrated via a common and unique coding structure for all levels of the Contract Work Breakdown Structure (CWBS) and the organizational structure.

Typical Work Products

- Data item matrix describing the unique coding structure that defines the common data elements that link the management systems
- The unique coding structures that integrate the subsystems for the data-related products
- Work authorization documentation

3 EVMS GUIDELINES: PLANNING, SCHEDULING, AND BUDGETING CATEGORY (Guidelines 5 through 13)

The focus of the Planning, Scheduling, and Budgeting category is to develop plans and strategies to achieve the desired program cost, schedule, and technical objectives. This includes the identification of short- and long-term resource needs. The nine guidelines (5 through 13) that comprise this category set the foundation for integrating scope, schedule, and budgets into a baseline against which accomplishments will be measured. This baseline, called the Performance Measurement Baseline (PMB), is a dollarized time-phased plan established primarily at the control account level that reflects how the contractor intends to use its resources to accomplish all the authorized work (Guidelines 7 and 8). The PMB provides the Government and the Contractor a common reference point for discussing program progress and status. The sum of Management Reserve (MR) and PMB is the Contract Budget Base (CBB) and/or Total Allocated Budget (TAB). The CBB/TAB is reconcilable with the contract target cost (Guideline 13).

Integral to establishing the PMB is the use of an integrated network schedule (Guidelines 5 and 6). The guidelines in this category require development of an integrated network schedule that establishes and maintains a relationship between technical achievement and progress status. The schedule provides visibility into the accomplishment of the tasks required for execution of the contractual scope of work and is the basis for creating the PMB.

The guidelines further establish the planning parameters associated with the PMB including:

- Establishing the Contract Budget Base (CBB), including authorized unpriced work (Guideline 7).
- Using Summary Level Planning Packages (SLPP) for effort that cannot yet be detail planned at the control account level (Guideline 7).
- Authorizing work and identifying significant elements of cost (labor, material, subcontract, and other direct cost) (Guideline 8).
- Decomposing control account work scope into work packages for near-term effort and planning packages for effort outside the current planning window (Guideline 9).
- Ensuring the budgets of work packages and planning packages sum to the total budget authorized for that control account (Guideline 9).
- Applying the most appropriate earned value measurement technique to ensure progress reported against the PMB provides reliable performance data (Guideline 10).
- Ensuring the PMB includes indirect budgets (Guideline 11).
- Using Undistributed Budget (UB) for contractually authorized work scope not yet assigned to an organizational element at or below the Work Breakdown Structure (WBS) reporting level (Guideline 12).

Allowance is made for a portion of the CBB to be withheld outside of the PMB as MR for internal management control purposes. MR is intended to provide the contractor with budget to manage risk within the established contract scope (Guideline 12). Lastly, the guidelines in this category emphasize maintaining the integrity of the PMB by ensuring the sum of lower-level budgets in the PMB does not exceed the total time-phased budget and all internal program budgets and MR reconciles to the contractual target cost (Guideline 13).

Subsections 3.1 through 3.9 describe Department of Defense's interpretation of the intent of each of the nine Planning, Scheduling, and Budgeting guidelines and expectations for implementing each guideline.

3.1 GUIDELINE 5: IDENTIFY INDICATORS TO MEASURE PROGRESS

EVMS Category: Planning, Scheduling, and Budgeting

EIA Standard Guideline: 2.2a

Identify, in the schedule, the physical products, milestones, technical performance goals, or other objective indicators that will be used to measure progress.

DoD Strategic Intent

Purpose of Guideline: To ensure program schedule(s) establish and maintain a relationship between technical achievement and progress statusing and provide objective performance data that accurately reflects the progress of the work.

Management Value: A key feature of the vertically and horizontally integrated network schedule is that it establishes and maintains the relationship between technical achievement and progress statusing through time. Interim measures are defined as the detailed schedule is established to ensure performance is measured as objectively as possible. Timely and accurate progress assessments lead to better management visibility into program progress and may be early indicators of program problems and opportunities. Identifying objective criteria, linked to technical progress indicators, ensures performance assessments reflect the true technical performance of the program. Early visibility results in management ability to effect timely actions to adjust program directions.

Intent of Guideline: Establishing contractually defined and internal milestones, as required, ensures that objective technical acceptance criteria remain consistent with the authorized work scope across the entire schedule hierarchy. Objective performance data, tied to technical milestones, provides management with accurate progress visibility and early indicators of program risks requiring corrective action. Identifying and selecting appropriate objective completion criteria, that will align with how technical performance will be accomplished, for each of the program's key events, decision points, and milestones is essential for ensuring accurate schedule status and providing program management actionable information (see Guidelines 6 and 10).

Attributes

- Objective program milestones aligned with the accomplishment of the program's technical requirements and goals are determined in advance, documented, and used to plan and measure progress.

Typical Work Products

- Internal schedules and/or Integrated Master Schedule
- Integrated Master Plan
- Contract and modifications
- Control account plan
- Documented technical performance goals

3.2 GUIDELINE 6: SCHEDULE AUTHORIZED WORK

EVMS Category: Planning, Scheduling, and Budgeting

EIA Standard Guideline: 2.2b

Schedule the authorized work in a manner that describes the sequence of work and identifies task interdependencies required to meet the requirements of the program.

DoD Strategic Intent

Purpose of Guideline: To provide program management with a fully integrated, networked, and time-phased baseline plan that provides visibility into the detailed progress and accomplishment of the milestones and tasks required for execution of the authorized scope of work.

Management Value: A fully-integrated schedule facilitates the establishment of a valid Performance Measurement Baseline (PMB). Scheduling authorized discrete work facilitates effective planning, statusing, and forecasting, which are critical to the success of a program. The fully-integrated network schedule provides program management a comprehensive status of authorized work along with the basis for time phasing for all discrete budget. The fully-integrated network schedule also provides timely tracking and communication of program performance. This is accomplished through a fully networked Integrated Master Schedule (IMS) and is a foundational component in the establishment of a valid PMB. This provides the ability to produce the critical and driving paths and allows program management to evaluate and implement actions designed to ultimately complete the program effort within contractual parameters. Adequately integrating schedule data enables program management to use the schedule for time-based analyses and Schedule Risk Assessments (SRA), both of which are critical to the success of meeting program commitments.

Intent of Guideline: A properly functioning networked schedule provides program management insight into the program's progress and its planned and forecasted duration. The IMS includes a baseline and forecast schedule. The forecast durations are based on the most likely time required to complete the remaining scope. The forecast schedule is the basis for the time-phased Estimate to Complete. The IMS is the networked schedule that establishes a logical sequence of work that leads through key milestones, events, and decision points to completion of program objectives. It contains all authorized discrete work assigned to program organizational elements, including subcontractors, responsible for performing the work consistent with the Work Breakdown Structure (WBS). When an Integrated Master Plan (IMP) is contractually required, the schedule structure integrates with the information in the IMP. In the event Level of Effort (LOE) is included in the IMS, it will not impact discrete work or the calculation of the critical and driving paths.

The logical sequence of the schedule is horizontally and vertically integrated. It reflects interdependencies between tasks/activities as appropriate for the determination of the critical path (see Figure 4: Horizontal and Vertical Schedule Integration in the IMS). The generation of the critical path, near critical paths, and driving paths identifies the sequence of tasks/activities that impact the program's overall duration (see Guidelines 14, 18, 20,

and 23). The prime contractor is responsible for planning and integrating material and subcontracted effort into the prime's IMS. For information regarding how work packages and planning packages relate to IMS activities (see Guideline 9). Work packages and planning packages in the IMS have unique coding structures relatable and consistent with the data of each of the other sub-systems (see Guideline 4).

Programs are often planned using inputs from a Manufacturing/Enterprise Resource Planning (M/ERP) System that include the detailed efforts (work orders, production orders, work bills, etc.) used to manage the procurement and assembly of material with the associated labor. These systems are inputs, not substitutes, of planning and scheduling the network schedule, IMS, with activities at the level commensurate with the size, risk and complexity of other predecessors and successors planned to manage the program. An analysis of material items is required to identify categories and material aggregation points to be tracked independently in the IMS (see Guideline 9). To support critical path analysis, the M/ERP integrates with the IMS, minimally at the work package level, through effective vertical and horizontal integration of network logic. An IMS contains end-to-end planning and scheduling of material with associated production labor for critical and driving path calculations (see Figure 5: Relationship between Integrated Master Schedule & M/ERP System).

Schedule Visibility Tasks (SVTs) have no resources and provide management visibility into a timespan that may otherwise be modelled in the IMS with a lag or constrained milestone. An SVT is not part of the budgeted program scope in the PMB nor used to assess earned value performance. Examples of SVTs include wait time and Government review period. SVTs are clearly and consistently identified within the schedule. SVTs are controlled, assigned a responsible owner, and statused in accordance with Guideline 14.

Schedule margin is an optional management method for accommodating schedule contingencies. Schedule margin tasks should be clearly identifiable. The schedule margin task duration can be substantiated with a risk management approach (i.e., risk register, Schedule Risk Assessment (SRA) results, or other risk assessment information). Schedule margin, if used, may only be represented in the schedule as the last task before key contractual events, significant logical integration/test milestones, end item deliverables, and/or contract completion, may not represent any specific scope or resources, and may not be used to assess earned value performance. Schedule margin tasks are intended to improve program management's ability to accurately plan, forecast, and manage scheduled work.

Risks and opportunity impacts are quantified in terms of probability, cost consequence(s), and/or schedule impacts as applicable (see Guidelines 20 and 23). Risk and/or opportunities that directly impact tasks/activities or milestones are identified in the IMS.

Figure 4: Horizontal and Vertical Integration in the IMS

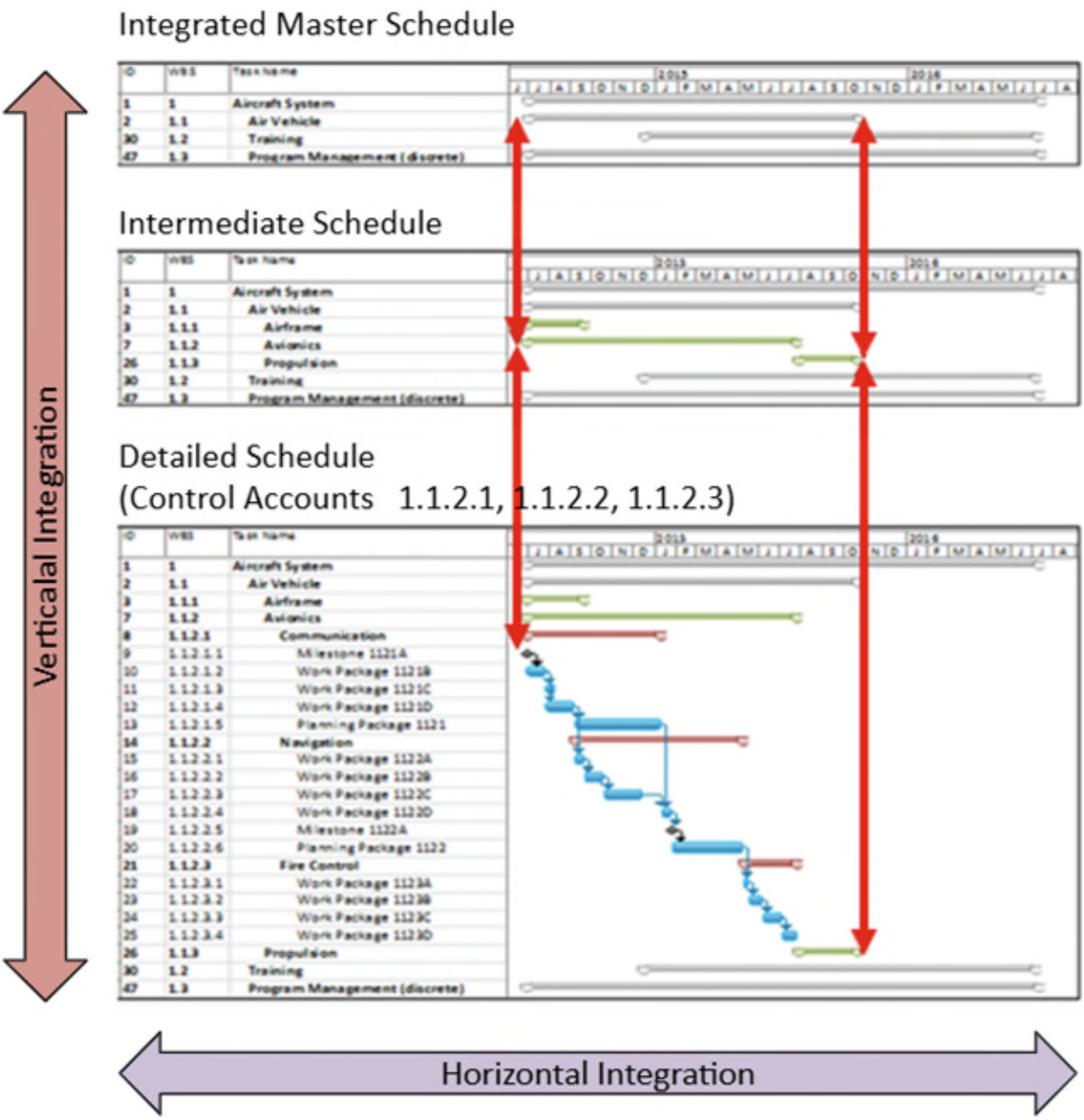
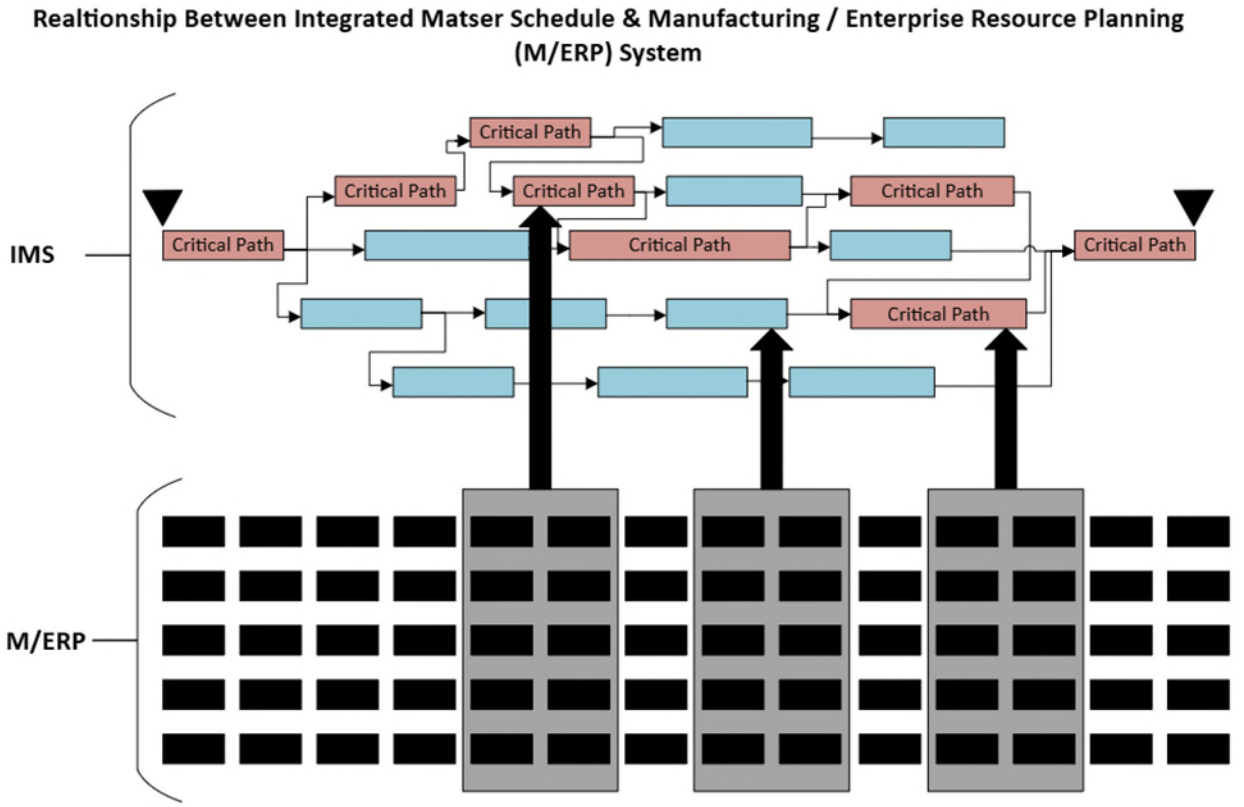


Figure 5: Relationship between Integrated Master Schedule & M/ERP System



To support critical path analysis, the M/ERP should support and underpin the IMS, minimally at the work package level, through effective vertical and horizontal integration of network logic.

Attributes

- The IMS reflects all authorized, time-phased discrete work to be accomplished.
- The network schedule/IMS depicts the sequence of work (horizontal integration) and clearly identifies the significant interdependencies that are indicative of the actual way the work is planned and accomplished.
- There is vertical schedule integration, and all levels of schedules support the contract/program schedule requirements (e.g., Statement of Work, design build specification, Integrated Master Plan, etc.).
- Program's key events, decision points, milestones and external dependencies are logically linked within the network schedule/IMS to support critical path, near critical path, and driving path analysis.
- The schedule provides baseline, forecast, and actual dates.
- Forecast durations are based on the most likely time required to complete the remaining scope.
- Planning and scheduling of material and subcontracted work is integrated into the IMS.
- Based on classification, the discrete material is planned end-to-end with receiving or production labor in the IMS.

- SVTs have no resources, are not part of the PMB, are clearly and consistently identified, and are controlled.
- Schedule margin, if used, is identifiable, derived from a risk management approach, justifiable in duration, and may only be represented in the schedule as the last task before key contractual events, significant logical integration/test milestones, end item deliverables, and/or contract completion.
- Risk or Opportunities impacting discrete effort are identified in the IMS.

Typical Work Products

- Internal schedules/Integrated Master Schedule
- Risk/Opportunity Register
- Schedule Risk Assessment
- Integrated Master Plan
- Control account plan
- Work authorization documentation
- M/ERP System outputs

3.3 GUIDELINE 7: ESTABLISH AND MAINTAIN THE PERFORMANCE MEASUREMENT BASELINE

EVMS Category: Planning, Scheduling, and Budgeting

EIA Standard Guideline: 2.2c

Establish and maintain a time-phased budget baseline comprised of scope, schedule, and budget at the control account level. Budget for far-term efforts may be held in higher-level accounts until an appropriate time for allocation at the control account level. Initial budgets established for performance measurement are based on either internal management goals or the external customer-negotiated target cost, including estimates for authorized but undefinitized work.

DoD Strategic Intent

Purpose of Guideline: To create a time-phased, resourced plan against which the accomplishment of authorized work is measured. This plan must ensure resources for accomplishing the work are time-phased consistent with the planned work scope for all authorized work. This time-phased relationship between authorized work, time, and resources is referred to as the Performance Measurement Baseline (PMB).

Management Value: The Government and the Contractor have a common reference point, the PMB, for discussing program progress and success. The accurate reporting of progress against a mutually recognized plan facilitates the implementation of actions by management to maintain or bring the program back on plan. The establishment of realistic budgets, directly tied to the authorized scope of work, is essential for each organization responsible for performing program effort. Additionally, the establishment and use of the PMB is indispensable to effective performance measurement and should be in place as early as possible after contract award or Authorization to Proceed (ATP).

Intent of Guideline: The PMB is the time-phased budget plan against which actual performance is assessed. The Contract Budget Base (CBB) value used to establish the PMB is tied to the current value of the contract, including any Authorized Unpriced Work (AUW). Budgeting is the process of distributing or allocating cost targets to control accounts and (if appropriate) Summary Level Planning Packages (SLPPs) (see Figure 6: Budget Hierarchy).

The PMB should be planned into Control Accounts (CAs) to the maximum extent, as practical. Since CA budgets and schedules also establish the constraints required for baseline control, care is exercised in the establishment of CA budgets to ensure a correlation between the scope involved and the amount of effort necessary to execute that scope given the resources authorized. Doing this should prevent inadvertent front-loading of the baseline.

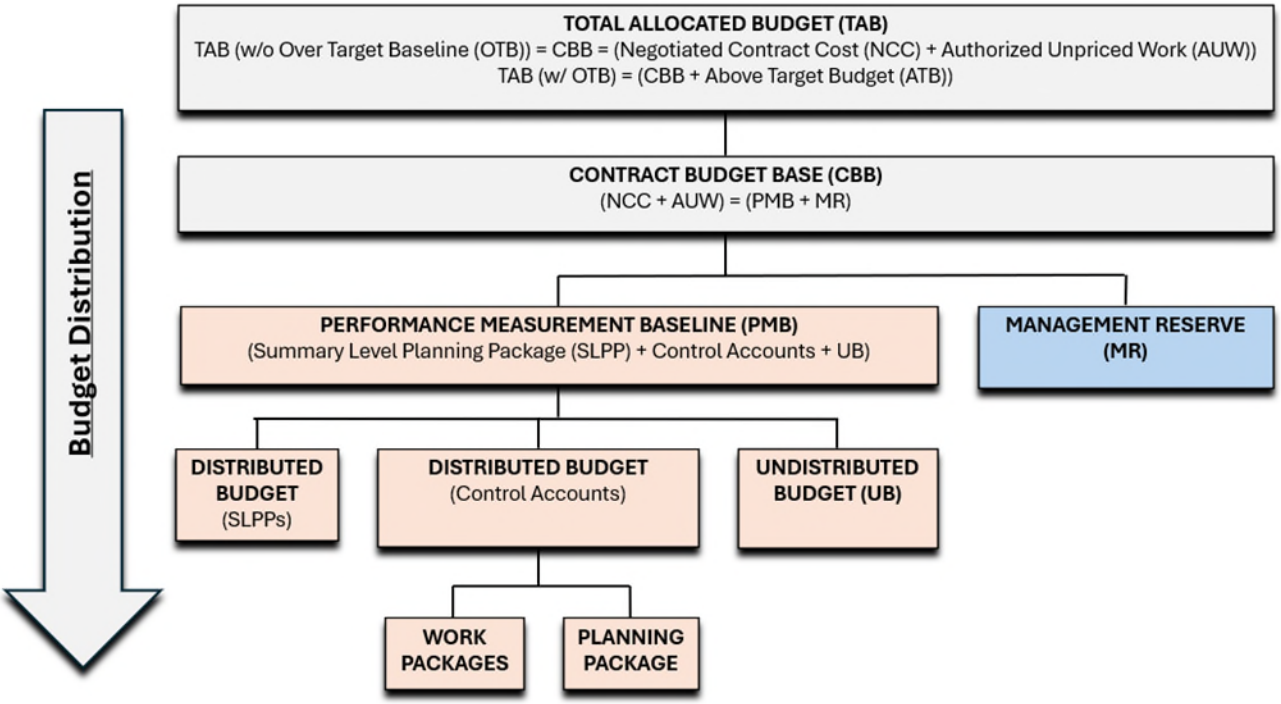
For future effort that cannot practically be identified to a control account, it is permissible to establish an SLPP above the control account level. Each SLPP has a responsible manager and identifies the associated scope, schedule, and budget (see Figure 7: Time-Phasing the PMB). Through a coding structure, SLPPs have unique identifiers (UIDs)

enabling inter-relationships between the budgeting and scheduling processes which ensure correct assignment to a Contract Work Breakdown Structure (CWBS) element and Organizational Breakdown Structure (OBS) element (see Guidelines 4 and 5). These summary efforts should be subdivided into control accounts at the earliest opportunity. Planning horizons may be used to determine the appropriate period in which to convert SLPPs into control accounts (see Guideline 25). The budget for this effort is identified specifically to the work for which it is intended, time-phased, periodically reviewed for validity, and not used to perform other scopes of work. Eventually, all the work is planned by specific organizational elements to the control account.

Budget tied to authorized scope but not readily identifiable to a specific control account or SLPP can be temporarily placed in Undistributed Budget (UB) (see Guideline 12). The budget set aside for known and unforeseen program risks and contingencies is referred to as Management Reserve (MR) and is not included in the PMB (see Guideline 12). The contractor ensures that the resource plan is executable within budget and schedule constraints and is realistic to achieve the contract scope. When applicable, contractors should be able to demonstrate the initial budget distribution at the control account level is consistent with need-by dates and the resources loaded in the Manufacturing/Enterprise Resource Planning (M/ERP) System.

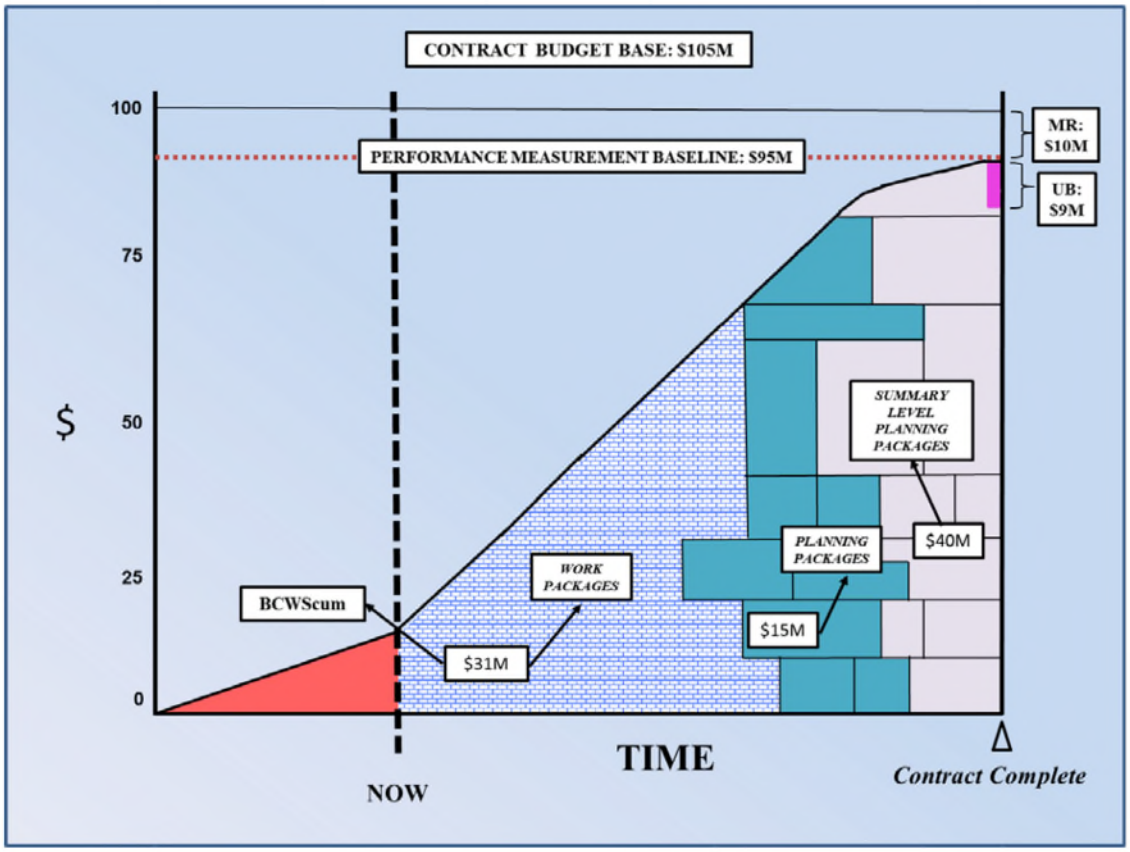
There may be situations when the existing baseline does not represent the actual plan forward. When the Total Allocated Budget (TAB) exceeds the CBB, an Over Target Baseline (OTB) occurs. When the baseline schedule exceeds contract milestones, an Over Target Schedule (OTS) occurs (see Guideline 27).

Figure 6: Budget Hierarchy



Note: Contract Target Cost is synonymous with Negotiated Contract Cost (NCC)

Figure 7: Time Phasing the PMB



Attributes

- The PMB is time-phased in alignment with the Integrated Master Schedule (IMS), with budget distributed in accordance with the accounting calendar for the authorized work scope including all control accounts and SLPPs.
- The time-phased budget baseline reflects the resources planned to perform the authorized work scope.

Typical Work Products

- Control account plans
- Integrated Master Schedule
- Budget log reflecting base contract plus all modifications
- Management reports from cost tool
- Integrated Program Management Data and Analysis Report
- Fiscal/accounting calendar

3.4 GUIDELINE 8: AUTHORIZE SCOPE, SCHEDULE, AND BUDGET BY COST ELEMENTS

EVMS Category: Planning, Scheduling, and Budgeting

EIA Standard Guideline: 2.2d

Authorize control account scope, schedule, and budget comprised of elements of cost (labor, material, subcontractors, etc.) required to complete the effort.

DoD Strategic Intent

Purpose of the Guideline: To ensure resources are authorized and budgeted by element of cost (labor, material, subcontract, and other direct costs) for all authorized work.

Management Value: The ability to allocate resources effectively and ensure all required resources are committed and available to the program is enhanced by segregating resource types. Ensuring control account budgets are authorized and planned by elements of cost (EOCs) facilitates management insight into program performance at the resource level. This enables the contractor to more effectively manage and control the execution of the control account work scope within schedule and budget constraints.

Intent of Guideline: Through a formal work authorization process, the budget's elements of cost required to execute the control account's scope of work are identified, planned, and documented. Approved work authorization precedes the baseline start and actual start of work. The budgeted elements of cost are identified in the work authorization documentation that includes the necessary information for integrating authorized work scope, schedule, and budget. This integrated information may exist in sources such as the work authorization document(s), control account plan, and other documentation that supports the defined work authorization process. The business rhythm, accounting calendar and cycle times for the work authorization process need to be planned in such a way that the work is authorized (or amended) prior to start of work. Formally authorizing the work ensures the assignment of program work scope to the responsible organization is documented and the resources required for completing the work are budgeted and acknowledged by the management team before the commencement of work. Budget is established for work scope which is then further planned by the EOCs for labor, material, subcontractor, and other direct costs required to accomplish it.

Budgets are established by EOC: direct labor, subcontractor, material, and other direct costs (see Guideline 11). Budgets may be stated in dollars, hours, or other measurable units consistent with the budget values reflected in the control account plans and the latest work authorization documentation. It is necessary to use current rates (i.e., approved, provisional, proposed, recommended) when establishing a valid Performance Measurement Baseline (PMB). Current rates are to be utilized when incorporating new scope into the PMB. However, a re-pricing of existing baselined work to the current rates is at the discretion of the contractor's defined Earned Value Management System (EVMS) processes. This may require the contractor to maintain multiple rates or rate tables. De-scoped work is to be removed using the rates that are baselined with the affected scope (see Guideline 24). Control account budgets are time-phased consistent with the program

schedule. Material budgets should be based on the material scope as defined by an indentured parts list, defined/expected quantities, and unit costs needed to meet the requirement.

Authorized subcontracted work is integrated into the prime contractor's PMB. The budget for authorized subcontractor work is based initially on the prime contractor's estimated value (see Guideline 25).

Attributes

- Work authorization process/documentation identifies work scope description, budgets segregated by elements of cost (i.e., direct labor dollars/hours, material dollars, subcontract dollars, and other direct costs), and period of performance for the authorized effort.

Typical Work Products

- Work authorization documentation
- Control account plans
- Bill of Materials/Priced Bill of Materials/indentured parts list for material
- Integrated Master Schedule
- Management reports from cost tool
- Contract Work Breakdown Structure dictionary

3.5 GUIDELINE 9: PLAN WORK PACKAGES AND/OR PLANNING PACKAGES

EVMS Category: Planning, Scheduling, and Budgeting

EIA Standard Guideline: 2.2e

Plan the authorized scope, schedule, and budget into work packages and/or planning packages. Determine budgets in terms of dollars, hours, or other measurable units such that the sum of all work package and planning package budgets equal the control account budget.

DoD Strategic Intent

Purpose of Guideline: To ensure control account work scope is decomposed into executable and measurable segments of work that are accomplished within the authorized control account period of performance (POP). To maintain the integrity of the Performance Measurement Baseline (PMB) the budgets of work packages and planning packages sum to the associated control account's authorized Budget at Completion (BAC).

Management Value: Work packages and planning packages contain authorized scope and budgets that include specific time-phased resource requirements in dollars, hours, or other measurable units. This provides program management insight into near-term and long-term resource requirements to ensure availability for proper execution. Material planning is accomplished in a manner which provides identification and classification to ensure effective management visibility.

The work package and planning package budgets accurately summarize to the control account (scope, schedule, and budgets) and are the same value that is time-phased into work packages and planning packages. The benefit of proper summarization results in a program plan that correlates with the contract requirements and, therefore, provides a common reference point for Government-contractor discussions and accurate progress assessments. It avoids the over or under allocation of program budgets.

Intent of Guideline: The control account is the management control point where program cost, schedule, and work scope requirements are integrated and managed. Control accounts are decomposed into work packages and planning packages, segregated by elements of cost. For the program manager to effectively manage execution of the program within budget and schedule constraints, discrete work packages are established and objectively measured. Work packages reflect the expected way the work is to be done and are a distinguishable subdivision of a control account, assignable to a single program organizational element. This is where the work is planned and technical progress is measured towards control account and program milestone completion. Work package and planning package quantities, sizes, and durations within a control account will vary subject to scope, internal management needs, and the size and complexity of the contract. Planning the work in manageable segments provides for more accurate performance status as task execution is measured at the working level. Through coding structures, work package(s) and planning package(s) have unique identifiers (UIDs) enabling inter-relationships between the budgeting, scheduling and cost accumulation processes which ensure correct assignment within a control account, charge number structure(s) (as applicable to work

packages) (see Guidelines 4 and 5). Distributing all control account budgets to either work packages or planning packages ensures the Performance Measurement Baseline (PMB) is planned at an executable level that aligns with how meaningful performance measurements will be achieved. Work packages and planning packages have authorized work scope, baselined period of performance, and budget. Work packages have budgets and work scope supported by sound rationale and time-phased to properly reflect when the work will be accomplished.

In general, budgets for all material should be planned discretely using objective milestones or another rational basis for measuring the amount of material consumed. To effectively plan material in the Earned Value Management System (EVMS), the contractor identifies material categories for material planning, scheduling, tracking, and reporting. In the absence of this type of identification and classification, all material items are treated as discrete.

For contractors implementing modernized and automated material control systems in production environments which include Grouping, Pegging, and Distribution (GPD) concepts and capabilities, careful consideration is addressed regarding the following:

- Material classes and categories between the EVMS (as described) and the material control system are defined and mapped with the product-oriented Work Breakdown Structure (WBS) and charge numbers (network demand) (see Figure 8: Notional EVMS and Material Process Relationships).
- The WBS should be aligned in a product-oriented manner with the material control system products rather than a functional approach to ensure the material work scope and budget relationship is established for accurate comparison to direct costs.
- Breakpoints in groupings and grouping definitions are aligned with how the planned material item(s) use/consumption is related to the modeled schedule need dates and associated material budgets.
- Breakpoints are defined and establish cost collection points in the priced and indentured parts list.
- The planned consumption of material models how the charge numbers (network demand) are assigned to the WBS in advance of work commencement.
- Processes are defined and established relative to GPD planning. Reprioritization, re-routing, retroactive changes, and movement of performance and direct costs are addressed in Guideline 26.

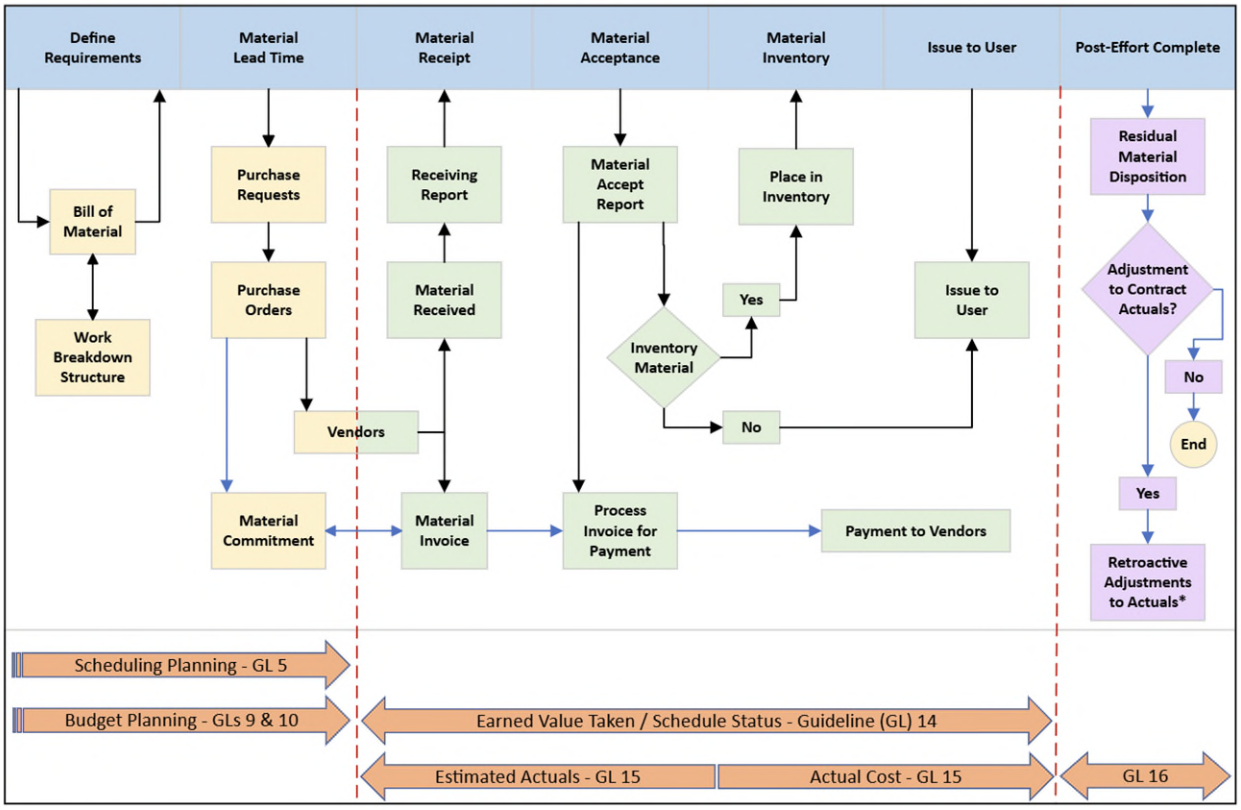
For major subcontractors, the prime contractor is responsible for ensuring subcontract work scope and associated time-phased budgets are consistent with the subcontractor baseline plan. The prime contractor must also ensure that major subcontractor and prime contractor baseline plans are integrated and traceable. Based upon Customer specifications, material items that are subcontracted to vendors to develop, build, fabricate, or manufacture may be planned (Budgeted Cost for Work Scheduled (BCWS)), performance taken (Budgeted Cost for Work Performed (BCWP)), and costs accrued (Actual Cost of Work Performed (ACWP)) using progress payment milestones that are supported by a plan detailing technical accomplishment.

When authorized control account work scope cannot be planned in the near-term, a planning package is used for holding the scope, schedule, and budget until the work is detail planned into work packages. The planning package is time-phased with the known schedule requirements and is detail planned into work package(s) at the earliest practicable point before any work is performed on the scope contained in the planning package. The budget for this effort is identified specifically to the work for which it is intended, time-phased, periodically reviewed for validity, and not used to perform other scopes of work. As near-term work is more detailed than that of work scope contained in planning packages, there is a periodic detail planning process in place to convert Summary Level Planning Packages (SLPPs) into control accounts and control account planning packages into work packages (or lower-level tasks/activities).

To solidify the PMB for accurate performance measurement, the contractor's system description must establish continuous planning processes (e.g., rolling wave, block planning, etc.) to be used to convert the work scope in SLPPs into control accounts and control account planning packages into work packages before the start of that work. This must also include a designated "freeze period" which supports forward planning discipline. The amount of time defined as the freeze period is established in consideration of the acquisition environment and program execution methods the company applies (see Guideline 25).

It is important to the overall integrity of the PMB that control account budgets are planned and summarized accurately. The control account is the management control point at which the program manager will analyze program performance by comparing actual performance to the planned budgets. All control accounts contain the budget that supports and coincides with the associated work scope assigned to the responsible organization. The value of the budgets for individual work packages and planning packages within the control account will sum to the total budget authorized for that control account.

Figure 8: Notional EVMS and Material Process Relationships



Note: Figure does not reflect milestone progress payments.

Attributes

- Work packages have the following characteristics:
  - Contain the scope of work and budget at the level where work is performed or aggregated.
  - Are distinguishable from all other work packages.
  - Are assigned to a single organizational element.
  - Include scheduled start and completion dates and, as applicable, interim milestones, all of which support the basis of technical accomplishment.
  - Have a time-phased budget or value expressed in terms of dollars, labor hours, or other measurable units that is substantiated in terms of supporting program plans.
  - Have durations that are limited to a span of time that is practical for the work scope. Longer-duration discrete work packages have interim objective measures, such as points of technical achievement, to enable accurate performance assessment.

- Other work package planning requirements include:
  - Subcontract effort is identified (as applicable) and time-phased consistent with subcontractor plans.
  - Material is identified by category within planning systems, planned in support of the need dates for the material items, and time-phased by dollar amount suitable for the type of material category.
  - Discrete effort is identified within the Integrated Master Schedule (IMS) and other supporting schedules.

- Planning packages have the following characteristics:
  - Are the logical aggregations of work within a control account, normally the far-term effort that can be identified, budgeted, and time-phased in baseline planning, but cannot yet be detail planned into work packages.
  - Are identified within the IMS and other supporting schedules.
- The sum of all work package budgets plus planning package budgets within control accounts equals the budgets authorized for those control accounts.

Typical Work Products

- Control account plans
- Objective plan for substantiating the value of work claimed as progress (e.g., quantifiable backup data)
- Integrated Master Schedule
- Management reports from cost tool
- Work authorization documentation
- Bill of Materials/Priced Bill of Materials/indentured parts list for material
- Material management processes

3.6 GUIDELINE 10: ESTABLISH PERFORMANCE MEASUREMENT CRITERIA

EVMS Category: Planning, Scheduling, and Budgeting

EIA Standard Guideline: 2.2f

Establish objective performance measurement criteria for each work package consistent with the way work is expected to be accomplished. Only that effort which is not measurable is identified as level of effort.

DoD Strategic Intent

Purpose of Guideline: To ensure selection of an appropriate Earned Value Technique (EVT) that allows for accurate and objective performance measurement. Classification of work scope as Level of Effort (LOE) is limited to activities that have no practicable, measurable output or product associated with technical effort that can be discretely planned and objectively measured at the work package level.

Management Value: The selection of appropriate EVTs will allow for accurate and objective performance measurement. This provides program management accurate status and situational awareness of program execution for proactive resolution of issues impacting cost, schedule, and technical achievement of program objectives.

In every program, there are tasks accomplished that, by their nature, are not measurable. Prudent use of LOE is necessary to minimize the distortion of performance data for effective program management. The Control Account Manager assesses each assigned Work Package and determines if there is a discrete way to measure progress towards its completion. This assessment leads to a Performance Measurement Baseline (PMB) that both minimizes the subjective measurement of the progress and provides accurate information to management for program decision-making.

Intent of Guideline: A fundamental expectation of an Earned Value Management System (EVMS) is that objective and actionable information on program status is generated and used as the basis for making logical, well-informed program management decisions. Each work package is established using the best method to budget, plan, and then measure its progress toward completion. The EVT is established based on how the work is planned (Budgeted Cost for Work Scheduled (BCWS)), and performance (Budgeted Cost for Work Performed (BCWP)) is earned consistent with the EVT. It is important to ensure the performance measurement criteria are based on modelling technical accomplishments as the foundation upon which discrete EVTs are established.

Based on the nature of the work contained in work packages, an appropriate EVT is identified for use in measuring work accomplishment. Discrete work is defined as a specific product or service with distinct and measurable outputs that are relatable to the program's technical objectives. These measurable outputs are where program status can be measured objectively. Examples of measurable products or outputs include design efforts, a tool design package, a build-to-package, a shop order, a part number, a purchase order, or any other definable product. The objective is for the contractor to identify and plan the authorized work within a control account using discrete, short-spanned work

packages comprising all the measurable efforts. Where long-duration work packages are unavoidable, interim milestones modelling measurable, technical accomplishment are required for performance measurement.

EVTs are established and documented at the work package level. When an objective plan for substantiating the value of work claimed as progress (e.g., quantifiable backup data) is required then any necessary supporting documents to objectively measure and track monthly progress is pre-determined at work package establishment. Contractors implementing nested performance measurement technique(s) (i.e., activity level) uniquely describe the method in the system description and implement this practice as support to the work package EVT without adding confusion to what is authoritatively an EVT.

If multiple elements of cost exist within the same work package, then careful consideration needs to be made ensuring the scope of those elements of cost, which are comingled within the same work package, can be assessed utilizing the single EVT.

The concept of "apportioned effort" should be used when work of a supporting nature ties directly to a discrete technical activity. Apportioned effort is work that is not readily measured or divisible into discretely planned work packages but is directly proportional to the planning and performance of other discretely planned work. If the contractor chooses to use this technique, the EVMS documentation must cover the requirements for the use of this measurement technique and the need to document the factor used to establish the relationship (i.e., a direct, historical relationship between the base effort and the apportioned effort). It must also point out that the progress identified in the base account (percent complete) provides the basis for the progress percentage of the apportioned account.

LOE is defined as those authorized work activities that, by their nature, are either not measurable (i.e., there is no measurable output/product), or for which discrete or apportioned measurement is impracticable. LOE activities are typically administrative or supportive in nature and may include work in areas such as program management, contract administration, financial management, security, field support, help desk support, clerical support, etc. The nature of LOE is such that the BCWP reflects only the passage of time during which LOE activities are planned; there is never a Schedule Variance (SV) (i.e., BCWP always equals BCWS). Therefore, LOE is limited only to those activities that are unable or impracticable to be measured discretely to ensure accurate overall progress assessment.

Work packages are separately planned as either LOE, discrete, or apportioned effort to facilitate accurate insight into performance and variance status (see Guideline 9). Baseline start and finish dates for work packages planned as LOE are proactively managed to ensure variances do not result from failure to maintain the plan (see Guidelines 14 and 25). The incorrect application of LOE may distort performance status. Care is taken to ensure when a control account contains work packages planned with both discrete and LOE, the contractor establishes controls to minimize any potential distortion of control account performance and variance analysis.

Material work scope and budgets may be planned discretely in a variety of ways. Material is segregated from other elements of cost, planned in support of the need dates for the material items, and time-phased by dollar amount suitable for the type of material category (see Figure 8: Notional EVMS and Material Process Relationships).

A material management process addresses the following characteristics for planning material categories and supporting performance measurement:

- Comparison of earned value (BCWP) to material budgets (BCWS) and Actual Cost of Work Performed (ACWP) requires that the appropriate point of performance measurement be established.
- Generally acceptable points for measuring material item performance are:
  - Point of receipt, inspection, and acceptance
    - Note: BCWP for discrete material items may be claimed upon receipt, inspection, and acceptance, provided the material items are placed into use within a reasonable time or are specifically identified to a serially numbered end item.
  - Point of stock
  - Point of issue to work in process for use in an end item
  - Point of issuance directly to the user

The Program Evaluation and Review Technique (PERT) Cost Formula is a non-discrete EVT. This method calculates BCWP by comparing the actual cost of received material (ACWP) to the expected total cost for that material (Estimate at Completion (EAC)) and applying the resulting percentage to the originally budgeted value for the material (Budget at Completion (BAC)), BCWP = (ACWP/EAC) x BAC. The use of this method requires that the EAC be evaluated and updated every month. PERT is only appropriate for high quantity, low-value and low-risk material items where measurement is impracticable (e.g., material that is consumable such as bolts, fasteners, welding rods, etc.). Any material items identified as non-discrete must have defined controls regarding price and quantity considerations and ensure performance measurement will not be skewed without adequate consideration of price variability, price ranges, as well as, similar or like categories of material.

Attributes

- Discrete measurement techniques are pre-determined, documented, and include any necessary supporting documents required to objectively measure and track monthly progress.
- Work packages planned as LOE contain efforts of a general or supportive nature that do not produce technical content leading to an end item or product.
- LOE work packages have work scope supported by sound rationale and time-phased budgets that reflect when the work will be accomplished.
- Work package EVTs are identifiable within the system.
- Establishment of EVTs for material are consistent with the manner in which material is planned.

Typical Work Products

- Control account plans
- Objective plan for substantiating the value of work claimed as progress (e.g., quantifiable backup data)
- Integrated Master Schedule
- Management reports from cost tool
- Work authorization documentation
- Work Breakdown Structure Index & Dictionary
- Management reports from cost tool
- Government requirements document (e.g., Statement of Work, Build Specifications)
- Bill of Materials/Priced Bill of Materials/indentured parts list for material
- Defined and documented categories of material

3.7 GUIDELINE 11: ESTABLISH INDIRECT BUDGETS

EVMS Category: Planning, Scheduling, and Budgeting

EIA Standard Guideline: 2.2g

Apply indirect rates, developed by the responsible organizations, to the program's direct resource budgets, at the applicable level, to determine the indirect budgets that support the establishment of the performance measurement baseline.

DoD Strategic Intent

Purpose of Guideline: To ensure indirect budgets (e.g., Overhead, General & Administrative, and Cost of Money) are established and included in the Performance Measurement Baseline (PMB) at the appropriate level for visibility.

Management Value: The overall value of establishing indirect budgets lies in the ability of the contractor to manage costs that cannot be directly assigned to individual cost objectives. By comparing actual indirect expenses to established indirect budgets, the contractor can determine if the absorption of indirect expenses based on existing documented allocation schemes is on track or if allocation rates require adjustment. It is critical to the contractor that, at the end of the accounting year, all indirect expenses are allocated. The accurate assignment of indirect budgets, therefore, ensures that each program is allocated only its fair share of indirect costs.

Intent of Guideline: Program indirect costs are for common activities that cannot be identified specifically with a particular program or activity and are budgeted and controlled separately at the functional or organizational manager level. Indirect budgets play an important role in budgetary control and management and can account for a major portion of the cost of any program. The overall value of establishing indirect budgets lies with the ability of the contractor to manage cost elements that cannot be directly assigned to individual programs or program tasks and ensures that indirect costs allocated to programs are applied fairly and appropriately. Without this budgeting requirement, the PMB would not accurately measure the total cost to the Government based on contractor performance/progress.

Indirect budgets are established at the appropriate organizational level for each pool and cost sub-element. Budgets for indirect costs as implemented on the programs are developed and planned in conjunction with the direct budgets and are consistent with the contractor's documented procedures for how indirect costs are approved and allocated to the program (see Figure 9: Example of Application of Indirect Rates to Direct Costs).

Figure 9: Example of Application of Indirect Rates to Direct Costs

Cost Category	Direct Costs	Indirect Costs	Total Cost
Labor (100 Hours @ $75/Hour)	$7,500		$7,500
Labor Overhead ($110/Hour)		$11,000	$11,000
Total Labor Costs (Direct & Indirect)			**$18,500**
Material	$25,000		$25,000
Material Overhead (5%)		$1,250	$1,250
Total Material Costs (Direct & Indirect)			**$26,250**
Other Direct Cost	$500		**$500**
Total Direct & Indirect Costs	$33,000	$12,250	**$45,250**
General & Administrative Costs (20%)			**$9,050**
Total Costs (Fully Burdened)			**$54,300**

Attributes

- Indirect budgets are incorporated into the PMB in concert with described processes and current rates (i.e., approved, provisional, proposed).

Typical Work Products

- Contractor's Cost Accounting Standards Board Disclosure Statement
- Forward Pricing Rate Agreement and/or Forward Pricing Rate Proposal
- Indirect cost policies and procedures
- Internal program reports with indirect budgets
- Integrated Program Management Data and Analysis Report
- Management reports from cost tool

3.8 GUIDELINE 12: IDENTIFY UNDISTRIBUTED BUDGET AND MANAGEMENT RESERVE

EVMS Category: Planning, Scheduling, and Budgeting

EIA Standard Guideline: 2.2h

Identify any undistributed budget or management reserve.

DoD Strategic Intent

Purpose of Guideline: To ensure the budgets established for Undistributed Budget (UB) and Management Reserve (MR) are separately identified and controlled.

Management Value: UB is budget that applies to specific contractual effort that has not yet been distributed to control accounts or Summary Level Planning Packages (SLPPs). UB may also contain scope subject to removal from the distributed baseline due to contractual changes. Identification of the program's UB facilitates program management's ability to account for and report on all authorized scope and budget. UB is a transitional budget that should be distributed in a timely manner.

The ability to establish MR allows program management to react to unforeseen in-scope situations that arise during the life of a program. MR is budget for handling program risk and in-scope unanticipated events.

Intent of Guideline: UB and MR serve distinctly different purposes. It is important they are separately identified and traceable through the Earned Value Management System (EVMS).

UB accommodates contract situations where authorized scope and budget cannot yet be distributed within the Performance Measurement Baseline (PMB) to control accounts or SLPPs. UB is part of the PMB and is budget associated with contractually authorized work scope that has not yet been distributed to an organizational element at or below the Work Breakdown Structure (WBS) reporting level. Scope and associated budgets that may reside in UB include:

- Authorized Unpriced Work (AUW)
- Newly Definitized Work Scope
- Work placed under a Stop Work Order
- Work that has been de-scoped but not yet contractually removed from the program

UB is a short-term holding account where the budget is expected to be distributed into the PMB or removed from the contract. Delays in contract direction may impact the timely distribution of UB into control accounts. Controlling changes to the PMB related to MR allocation(s) and UB distribution(s) are addressed under Guidelines 24, 25, and 26 (see Guideline 24 for more information on circumstances when UB remains undistributed over a sustained period).

MR belongs to the contractor program manager, not the Government, and provides the contractor with a budget for unplanned activities within the current program scope. MR enables program management to respond to future unforeseen events within the work scope of the program by distributing budget to mitigate program risks. To establish MR, the contractor's program management sets aside budget based on the program's risk management process and assessment. MR is not associated with a specific scope of work and is not included in the PMB. MR is not a source of funding for additional work scope or the elimination of performance variances. MR is not a contingency fund and may neither be eliminated from contract prices by the customer during subsequent negotiations nor used to absorb the cost of contract changes. MR belonging to a major subcontractor is incorporated into the prime contractor's EVMS with traceability to the subcontractor's reported MR. MR is always reported as a positive value and is set aside for program risks or unplanned events that are in-scope to the contract. Applications of MR to the PMB may be allowed within the contractually authorized work scope (e.g., unforeseen effort that is in-scope to the contract but out of scope to the control account, rate changes, risk mitigation activities, or recognize realized opportunities, etc.).

Attributes

- UB has defined scope, is separately identified, is traceable to contractual actions, and is part of the PMB.
- MR has no scope defined and is separately identified outside of the PMB.

Typical Work Products

- Program budget control logs
- Integrated Program Management Data and Analysis Report

3.9 GUIDELINE 13: RECONCILE TO TARGET COSTS

EVMS Category: Planning, Scheduling, and Budgeting

EIA Standard Guideline: 2.2i

Provide that the program target cost goal is reconciled with the sum of all internal program budgets and management reserve.

DoD Strategic Intent

Purpose of Guideline: Internal budgets plus Management Reserve reconcile with the Contract Target Cost.

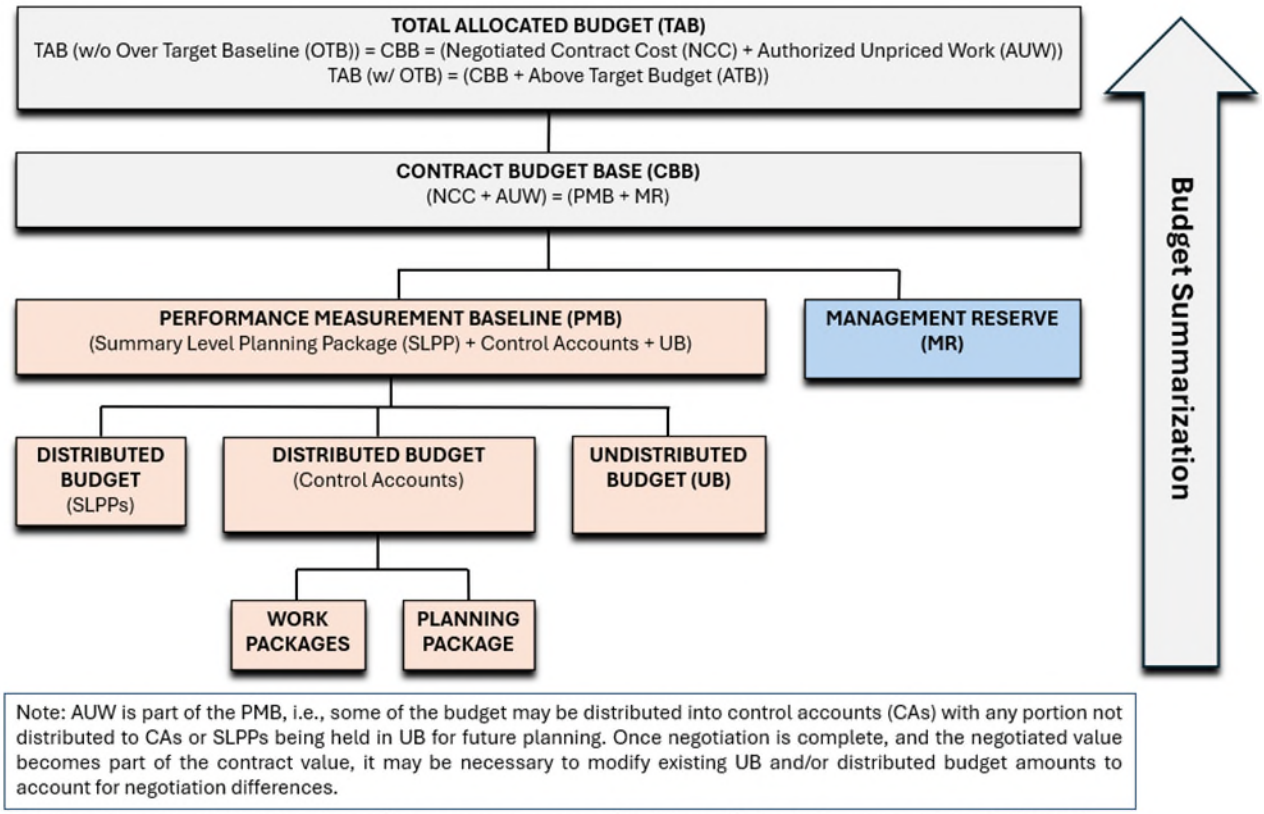
Management Value: By ensuring that the target cost value is traceable to the sum of the internal budgets and Management Reserve (MR), a common point of reference is established that is fully understood by all parties and supports both performance assessments and funding requirements.

Intent of Guideline: Contract Target Cost is synonymous with Negotiated Contract Cost (NCC). The Contract Target Cost plus Authorized Unpriced Work (AUW) must reconcile with the Contract Budget Base (CBB)/Total Allocated Budget (TAB). Reconciling the sum of all internal program budgets (control account budgets, Summary Level Planning Packages (SLPPs), Undistributed Budget (UB), and MR) to the contractually authorized cost establishes a valid comparison to the contract target cost (see Figure 10: Budget Hierarchy and Summarization).

It is essential for program management to account for all budget authorized for the contractual scope of work.

This is demonstrated by reconciling the NCC plus the estimated value of any un-negotiated unpriced-change-orders received to date to the CBB and to the Performance Measurement Baseline (PMB) plus MR to ensure there is consistency. All control account budgets, SLPPs, and UB are summed up to a total value known as the Budget at Completion (BAC) of the PMB. Having validated the sum of the internal budgets, this sum plus MR equals the value known as the CBB. The CBB also equals the TAB unless there is a recognized Over-Target Baseline (OTB). In that case, the TAB equals the CBB plus Above Target Budget (ATB) (see Guideline 27).

Figure 10: Budget Hierarchy and Summarization



Note: Contract Target Cost is synonymous with Negotiated Contract Cost (NCC)

Attributes

- The sum of the control account budgets, SLPP budgets, UB, and MR reconcile and trace to the NCC plus the estimated cost of AUW.
- There is reconciliation of the TAB to the CBB/NCC plus the estimated cost of AUW for any recognized OTB.

Typical Work Products

- Base contract and Modifications
- Program budget control logs
- Integrated Program Management Data and Analysis Report
- Management reports from cost tool

4 EVMS GUIDELINES: PROGRESS ASSESSMENT AND DATA COLLECTION CATEGORY (Guidelines 14 through 16)

The Progress Assessment and Data Collection category focuses on ensuring that progress is assessed and all direct and indirect costs associated with accomplishing the complete, contractual scope of work are properly transferred to the Earned Value Management (EVM) System (EVMS) at the level of detail required for performance analysis and reconcilable to contract performance reports. All financial transactions are expected to be documented, approved, and recorded properly in the financial accounting system on a consistent and timely basis in accordance with Generally Accepted Accounting Principles (GAAP) and applicable Cost Accounting Standards (CAS). As EVMS uses direct cost data from the contractor's accounting system to accurately report program costs and to conduct EVM performance and variance analysis, the accounting system is critical to ensuring EVM performance data is reliable and auditable. The primary objectives of the three guidelines (14 through 16) that comprise this category is to accurately measure performance, accurately collect actual cost data, and account for residual material.

The guidelines in the Progress Assessment and Data Collection category require that the schedule status and physical progress are routinely assessed based on technical accomplishment. Progress assessment results in the generation of the Budgeted Cost for Work Performed (BCWP). Additionally, the Actual Cost of Work Performed (ACWP) recorded in the EVMS is reconcilable to the direct costs recorded in a formal and accepted accounting system. Direct costs are accumulated in the accounting system using acceptable accounting techniques and transferred to the EVMS control accounts consistent with planned budgets (Guideline 15). All indirect costs allocable to a program are properly recorded and correctly allocated (Guideline 15). In the event direct costs for work accomplished have not yet been formally recorded in the accounting system, estimated actuals are used for EVM performance reporting and assessment thereby ensuring that any cost variances accurately report the cost status of the work accomplished (Guidelines 15). Records are maintained that demonstrate full accountability for all material purchased for the contract, including residual inventory (Guideline 16).

Subsections 4.1 through 4.3 describe Department of Defense's interpretation of the intent of each of the three Progress Assessment and Data Collection guidelines and expectations for implementing each guideline.

4.1 GUIDELINE 14: ASSESS PROGRESS

EVMS Category: Progress Assessment and Data Collection

EIA Standard Guideline: 2.3a

Using predefined performance measurement criteria, status the schedule and assess physical progress to determine budget earned. Earned value for material items may not be credited earlier than the actual receipt of the material nor later than the consumption of the item.

DoD Strategic Intent

Purpose of Guideline: To ensure schedule status and assessment of physical progress are performed routinely as part of the business rhythm.

Management Value: The accurate evaluation of performance demonstrates the progress achieved towards the key events, decision points, and milestones. This process provides managers with timely and accurate schedule status and credible early indications of program problems where there is a need to take corrective action.

Intent of Guideline: Schedule status (time-based) and assessing physical progress (earned value) is updated in accordance with the business cycle based on the size, risk, and complexity of the program, but no less than monthly.

- Schedule status includes the following:
  - Progressing status of time-now (i.e., current period end) such that actual dates are recorded, forecast dates are updated (as required), and remaining duration of in-progress tasks is determined.
  - Identification and assessment of actual progress against the baseline plan (see Guidelines 9 and 10) and forecast (see Guideline 20).
  - Risk or Opportunities identifiable in the Integrated Master Schedule (IMS) are updated, as required.

- Physical progress includes the following:
  - Calculation of IMS activity physical progress as applicable.
    - Ensure IMS activity physical progress is consistent with inputs into Budgeted Cost for Work Performed (BCWP) calculations based upon related Earned Value Techniques in active and completed work packages.
  - To ensure integration between the IMS and the Performance Measurement Baseline (PMB) the schedule progress reporting period should align to the accounting period.

The scheduling status and physical progress assessment initiates the generation of the critical path, near critical paths, and driving paths in determining the program's overall duration (see Guidelines 5, 18, 20, and 23).

As work is progressed based on earned value techniques, the corresponding budget value is "earned" and is the BCWP. To ensure cost and schedule variances are valid, the earned value method used to derive the BCWP is consistent with the method used to plan and resource the associated work (see Guidelines 10 and 17).

Level of Effort (LOE) performance is earned with the passage of time without consideration if actual work is performed. Therefore, baseline start and finish dates for work packages planned as LOE are proactively managed to ensure variances do not result from failure to maintain the plan (see Guideline 25). LOE work packages within the near term should be reviewed as part of the monthly business cycle in order to determine if the time-phasing of the future Budgeted Cost for Work Scheduled (BCWS) is indicative of when the work is expected to be performed.

The need for accurate comparison of earned value (BCWP) to material budgets (BCWS) and Actual Cost of Work Performed (ACWP) requires that the point of transfer of costs from the accounting system to the Earned Value Management System (EVMS) as actual cost for the material occurs within the same accounting period that earned value for that material is claimed. Material planning and performance measurement at the suitable point of performance is based upon when the material is needed to meet engineering or manufacturing need-by dates for developing hardware or for optimizing the production facility loading. Material performance is claimed consistently with how material budgets are planned. This point of performance is no earlier than the actual receipt of the material items. This prevents the early assessment of progress for material that may ultimately be canceled and for which earned value would have to be reduced. The latest point in time for material progress assessment is at the point of consumption. Other points of progress assessment include release from inventory to work-in-progress, receipt (with inspection and acceptance), and delivery to the user (i.e., for direct delivery material) (see Figure 8: Notional EVMS and Material Process Relationships).

To ensure cost and schedule variances are valid and accurate, the earned value method used to derive the BCWP is consistent with the method used to plan and resource the associated work (see Guidelines 9 and 10). The applicable actual direct costs must map to the accounting system (see Guideline 15).

Attributes

- The IMS is statused and provides progress and revised forecast dates based on the most likely time required to complete the remaining scope.
- The IMS produces valid, timely, accurate, and reliable critical and driving paths.
- Physical progress earned aligns to the schedule status within the current period
- Performance measurement is calculated within the current period in accordance with the selected earned value technique, and the derived value is documented.
- Baseline dates, budgets, and scope for work packages planned as LOE are proactively managed to avoid inaccurate performance measurement.
- Discrete material is statused based upon the corresponding defined point of measurement.

Typical Work Products

- Internal contractor performance reports reflecting material-related performance
- Control account plans for BCWP
- Integrated Master Schedule physical percent complete
- Material commitment reports, inventory reports, purchase orders, and payment records
- Residual material on hand or projected at completion
- Management reports from cost tool with BCWP

4.2 GUIDELINE 15: RECORD COSTS BY EOC

EVMS Category: Progress Assessment and Data Collection

EIA Standard Guideline: 2.3b

Collect actual costs (direct and indirect), by elements of cost, from a formal system controlled by the general books of account for comparison to corresponding budgets in the EVMS. Where actual costs are not available for comparison, estimated costs will be entered into the EVMS.

DoD Strategic Intent

Purpose of Guideline: First, ensure that the direct costs expended to accomplish a specific, budgeted scope of work are appropriately collected and recorded as required by the contractor's accounting procedures. Second, ensure all indirect costs are properly and correctly allocated in a consistent manner to the contract(s) at the level where indirect budgets are established.

Management Value: To support program management, direct costs are charged to a program consistent with the corresponding budgets to achieve effective performance management and Estimates at Completion (EAC). A significant portion of costs on a program are indirect. The consistent allocation of indirect costs supports management's understanding of the total program cost.

Intent of Guideline: The proper collection, recording, and transfer of direct costs to the Earned Value Management (EVM) System (EVMS) establishes a valid comparison with the associated budgeted work performed. This ensures accurate cost variances. The contractor's accounting system provides for accumulation of all direct costs (i.e., labor, subcontractor, material, and other direct costs) incurred in accomplishing the authorized work scope. To ensure Actual Cost of Work Performed (ACWP) is directly compared with the associated Budgeted Cost for Work Performed (BCWP) for performance measurement, the direct cost-charging structure established in the contractors accounting system should map to the control accounts at a minimum. Direct costs are collected at the control account level at a minimum to enable calculation of cost variance information for use in evaluating cost performance and providing cost projections at the level where the work is being performed. The ACWP reported in the performance reports must reconcile with direct costs recorded in the formal accounting system.

In the event direct costs have not yet been formally recorded in the accounting system, estimated costs (estimated actuals) will be used by the control account manager for EVM performance assessment and reporting in the EVMS. This is to address timing differences between the accounting system and performance reports. Once direct costs have been recorded, they will replace the estimated costs (estimated actuals) recorded in the EVMS. Negative adjustments to estimated actuals may be used to reflect a reduction in direct costs in the EVMS resulting in alignment of actuals with performance measurement. All estimated costs (estimated actuals) used for performance reporting will be reconcilable between the General Ledger and the EVMS.

Material costs are accurately accumulated within charge numbers using recognized, acceptable costing techniques. Unlike other elements of cost, material costs may be reported in the accounting system at various points in the material procurement process (from the point of receipt to the point of payment) (see Figure 8: Notional EVMS and Material Process Relationships).

Allocating indirect costs to a program consistent with the level where indirect budgets have been established facilitates analysis of indirect variances (i.e., budgeted values for indirect costs versus the actual indirect costs allocated) and potential management action(s) to control costs (see Guideline 19). Policies and procedures should ensure that the allocation of cost to a product, contract, or other cost objective is the same for all similar objectives. Accurate and timely collection of indirect costs are in accordance with the disclosure statement and accounting procedures. The contractor's documented procedures must ensure that all programs benefiting from the expenditure of indirect costs are allocated their portion of those costs.

Attributes

- The ACWP in the EVMS reconciles to the direct costs in the accounting system by element of cost.
- Direct costs are recorded on the same basis in which budgets were established at the control account level, at a minimum.
- The EVMS uses estimated costs (estimated actuals) to account for the costs of work accomplished that have not yet had direct costs recorded in the accounting system.
- Actual costs for work accomplished are transferred to the EVMS for a valid comparison of ACWP to BCWP for the same work in the same accounting period.
- The cost accumulation system provides for the accurate allocation of indirect costs based on documented procedures.
- Indirect costs are accumulated for comparison with the corresponding indirect budgets from the point of allocation to the contract total.
- Indirect costs in the EVM System reconcile with the cost accumulation system.
- Indirect rates are incorporated as necessary to ensure a realistic and timely allocation of indirect costs.
- ACWP is recorded in the same period that earned value is measured.

Typical Work Products

- Contractor's Cost Accounting Standards Board Disclosure Statement and/or Accounting Procedures
- Internal cost reports reflecting reconciliation of control account direct costs with the general ledger
- Charge number structure
- Management reports from cost tool
- General ledger
- Control account plans
- Internal control policy and procedures
- Control account indirect cost reports
- Contractor budgets/forward pricing forecasts
- Forward Pricing Rate Agreement/approved billing rates
- Internal contractor performance reports reflecting material-related performance
- Material commitment reports, inventory reports, purchase orders, and payment records
- Estimated actuals log

4.3 GUIDELINE 16: ACCOUNT FOR PURCHASED MATERIAL

EVMS Category: Progress Assessment and Data Collection

EIA Standard Guideline: 2.3c

Account for all purchased material for which earned value has been calculated, including material residual to the program.

DoD Strategic Intent

Purpose of Guideline: To ensure all material items purchased for the contract are accounted for through contract completion and final disposition.

Management Value: The establishment of accurate cost accumulation, performance measurement, and identification of residual inventory is essential since material may comprise a large portion of a contract's costs.

Intent of Guideline: The material management process provides full accountability for all material (including residual inventory) purchased for a program. This process must reflect the acquisition, issue to control accounts, return of unused materials from control accounts, scrap quantity and disposition, and residual material inventory. Normally, any unused material should be returned to stores/warehouse for disposition. The results of material disposition are incorporated into the Management Estimate at Completion (EAC). Documentation of the systematic approach to how material transfers, rework, and scrap are reflected within the EVMS is required to ensure appropriate collection of direct costs and performance measurement (see Figure 8: Notional EVMS and Material Process Relationships).

Attributes

- There is accountability for all purchased material for the program including material issues to control accounts, return of unused material, scrap quantity and disposition, and residual inventory to inform cost variance reviews and EAC updates.

Typical Work Products

- Bill of Materials/Priced Bill of Materials/indentured parts list for material
- Internal contractor performance reports reflecting material-related performance
- Control account plans
- Material commitment reports, inventory reports, purchase orders, and payment records
- Residual material on hand or projected at completion
- Material control records
- Management reports from cost tool
- Variance Analysis Reports

5 EVMS GUIDELINES: ANALYSIS AND MANAGEMENT REPORTS CATEGORY (Guidelines 17 through 23)

The Analysis and Management Reports category focuses on management use of the Earned Value Management System performance data to detect and act upon early technical, schedule, and/or cost deviations from the Performance Measurement Baseline. The seven guidelines (17 through 23) that comprise this category establish the minimum requirements for generating and analyzing cost and schedule variances (Guidelines 17 and 18), establishing and implementing corrective action plans (Guideline 22), and reviewing and updating credible Estimates at Completion (EAC) from the control account (Guideline 20) through the total program levels culminating in the Management EACs (Guideline 23). These minimum requirements facilitate the Control Account Manager's ability to identify cost and schedule performance drivers and to use that information to make informed programmatic decisions that will optimize the use of resources to accomplish the remaining work.

Consideration of the impact of indirect cost performance on the overall cost of the program is also included in the guidelines of this category. The guidelines require analysis of indirect cost performance and their impacts to the Estimates to Complete (ETC) for the remaining work (Guideline 19). They further require the performance data to be accurately summarized from the control account level to the contractually mandated reporting level by the program's work breakdown structure and organizational breakdown structure elements so that the same data being used to internally manage and execute the program is being communicated externally to the Government (Guideline 21). This ensures all program stakeholders are informed of progress and allows for management action to address identified problems and/or risks to program execution (Guideline 22).

Lastly, the guidelines require the contractor to periodically evaluate and update ETCs and derive control account and Management EACs that reflect a valid projection of program cost. Timely and reliable EACs provide the program manager visibility into future resource needs and support the Government's ability to provide sufficient funding to the program (Guidelines 20 and 23).
Subsections 5.1 through 5.7 describe Department of Defense's interpretation of the intent of each of the seven Analysis and Management Reporting guidelines and expectations for implementing each guideline.

5.1 GUIDELINE 17: CALCULATE SCHEDULE VARIANCE AND COST VARIANCE

EVMS Category: Analysis and Management Reports

EIA Standard Guideline: 2.4a

At least on a monthly basis, generate the following information for the control account and higher levels, as necessary for management control, using actual cost data from or reconcilable with the accounting system:

1. Comparison of the amount of planned budget and the amount of budget earned for work accomplished. This comparison provides the schedule variance.

2. Comparison of the amount of the budget earned and the actual (applied where appropriate) direct costs for the same work. This comparison provides the cost variance.

DoD Strategic Intent

Purpose of Guideline: To ensure accurate cost and schedule performance data is available. This ensures program management has timely, accurate, reliable, and auditable data to make assessments of program progress and the impacts of the technical, schedule, and cost deviations from the baseline.

Management Value: The Earned Value Management (EVM) System (EVMS) data is reliable and ensures that the variances calculated each month are a valid reflection of program status. Calculating and analyzing cost and schedule variances allows program management to assess the impact of deviations from the Performance Measurement Baseline (PMB) and to determine the necessity for corrective action(s) to achieve program objectives.

Intent of Guideline: The calculation of cost and schedule variances enables program management to assess deviations from the PMB. At a minimum, cost and schedule variances are calculated at the control account level on a monthly basis for analysis and variance reporting.

As work is progressed based on earned value techniques, the corresponding budget value is "earned" and is represented as the Budgeted Cost for Work Performed (BCWP) (see Guidelines 10 and 14). BCWP is the primary data element for which Budgeted Cost for Work Scheduled (BCWS) and Actual Cost of Work Performed (ACWP) (see Guideline 15) are compared to determine schedule and cost performance status. The performance data used for variance analysis is generated from the EVMS.

A schedule variance is the mathematical difference between BCWP and BCWS.

- Schedule Variance (SV) = BCWP - BCWS

A cost variance is equal to the difference between BCWP and ACWP.

- Cost Variance (CV) = BCWP - ACWP

Cost and schedule variances can be calculated for current period (monthly) or cumulative (to date). A positive value indicates a favorable condition, and a negative value indicates an unfavorable condition. Variances may be expressed in units such as dollars or hours or can be presented as a percentage (see Guideline 18).

In order to generate valid variances, earned value (BCWP) is assessed each month using the same methodology employed to establish the planned budgets (BCWS), and ACWP is either derived from or based on information provided by the accounting system or, in the case of the use of estimated actuals, other auditable sub-processes supporting the EVMS (see Guidelines 10, 14, and 15). The resulting variance will provide early insight into cost and schedule status for improved visibility of program performance (see Guideline 18).

Attributes

- Schedule and cost variances are calculated within the EVMS at the control account level (at a minimum) and other levels as necessary.

Typical Work Products

- Internal monthly cost and schedule performance reports
- Integrated Program Management Data and Analysis Report
- Management reports from cost tool

5.2 GUIDELINE 18: ANALYZE SIGNIFICANT VARIANCES

EVMS Category: Analysis and Management Reports

EIA Standard Guideline: 2.4b

Identify and evaluate, at least monthly for each control account, the significant differences between both planned and actual schedule performance and planned and actual cost performance; and analyze and provide the reasons for the variances in the detail needed by program management.

DoD Strategic Intent

Purpose of Guideline: To identify and analyze significant cost and schedule variances to determine the primary factors driving performance. This will facilitate program management's ability to forecast future cost and schedule performance as well as develop corrective action plans intended to regain program objectives.

Management Value: The ability to analyze deviations from the established Performance Measurement Baseline (PMB) permits management, at all levels, to implement corrective actions rapidly and effectively, to regain contract objectives. Insight into future cost and schedule performance, based on the analysis of cost, schedule, and at complete variances, will be facilitated.

The communication of programmatic earned value performance status enables program management to manage and control the execution of the program and assess whether deviations from the technical, schedule, and budget baselines require management action. Without this visibility into and the understanding of plan deviations, the success of the contract is jeopardized.

Intent of Guideline: Focused variance analysis by the control account manager provides program management insight into significant problem areas and highlights the potential need for management action to mitigate potential or realized program risks. On at least a monthly basis, cost and schedule variances are calculated at the control account and summary levels, as appropriate, for program management insight analysis and management reporting and action (see Guideline 17). Development and analysis of Variance at Completion (VAC) is addressed in Guidelines 20 and 23.

Variance analysis thresholds are established to focus management attention on significant deviations from the program's PMB. Cost variances and schedule variances that exceed the internal/external established thresholds are considered significant enough to require in-depth analysis and possible management action. The Earned Value Management System (EVMS) must have the capability to accurately calculate and analyze labor cost variances (rate and volume) and material cost variances (price and usage).

In addition to Government-specified reporting thresholds, the contractor analyzes variances consistent with internal procedures. Analyzing variances at the control account and summary levels enables program management to understand the impact of cost and schedule performance drivers at the point where scope, schedule, and budget are actively managed.

The analysis and reporting of cost and schedule variances by the control account manager will identify the type and magnitude of the variance (i.e., the value of schedule variance and cost variance) and contain the following information for management evaluation:

- Explanation of root cause(s) of the variance.
  - Schedule variance analysis addresses the schedule drivers, which includes analysis of the integrated network schedule(s). This is done to determine the status of specific activities, milestones, and critical events and to identify the factors contributing to the dollarized and time-based schedule variance.
  - Cost variance analysis addresses the cost drivers, which may include both direct and indirect components, for management visibility (see Guideline 19 for Indirect Cost Variance Analysis).
    - For analyzing labor cost variance relative to rate and volume variances, the formulas are:
      - Rate Variance = (Budget Rate - Actual Rate) x Actual Hours
      - Volume Variance = (Earned Hours - Actual hours) x Budget Rate
      - Labor Cost Variance = Rate Variance + Volume Variance
      - Note: Budget Rate = Earned Rate and Volume = Efficiency
    - For analyzing a material cost variance relative to price and usage variances, the formulas are:
      - Price Variance = (Budget Price - Actual Price) x Actual Quantity
      - Usage Variance = (Earned Quantity - Actual Quantity) x Budget Price
      - Material Cost Variance = Price Variance + Usage Variance

- Impact of the variance on the program including:
  - For schedule variance, impact to the critical path (e.g., a delay in a critical activity's completion affects the program completion), contractual milestones, and delivery dates.
  - Cost, schedule, and technical impact(s) on the control account, other dependent control accounts, work breakdown structure elements, and the total program.
  - Impact on the Estimates to Complete (ETC)/Estimates at Completion (EAC).

- Identification of Corrective action:
  - Corrective actions are based on analysis of root cause and must address mitigation of impacts, status of implementation, and closure.
  - If corrective action is not taken, then explain how the impact will not adversely affect accomplishment of program objectives (see Guideline 22).
  - If variances are unrecoverable, an explanation of the impact on the program is necessary (see Guideline 23).

Attributes

- Schedule and cost variances are identified and analyzed at control account and summary level.
- The variance analysis identifies the factors causing the variance (e.g., efficiency, rate, and timing) and potential impacts.
  - Labor cost variance analysis is substantiated from source records evaluating rate and volume variances.
  - Material cost variance analysis is substantiated from source records evaluating price and usage variances.
- Schedule variance analysis is supplemented with Integrated Master Schedule analysis and assesses the impact to future activities on the critical path, near-critical paths, and driving paths.
- Corrective actions/mitigation plans are identified.
- Work packages planned as level of effort are separately evaluated from discrete within the control account.

Typical Work Products

- Internal monthly cost and schedule performance/variance reports
- Integrated Program Management Data and Analysis Report
- Management reports from cost tool
- Integrated Master Schedule
- Control account plans

5.3 GUIDELINE 19: EVALUATE INDIRECT COST VARIANCES

EVMS Category: Analysis and Management Reports

EIA Standard Guideline: 2.4c

Evaluate indirect cost variances and the impact of indirect cost performance on individual program performance.

DoD Strategic Intent

Purpose of Guideline: To ensure indirect cost variances are regularly identified and reviewed for insight into their impact on overall contract level cost performance. This will facilitate program management's ability to forecast future indirect cost performance and develop corrective action plans intended to regain program objectives.

Management Value: Program management performs indirect variance analysis that provides visibility into potential cost overruns or underruns attributed to indirect rate changes. This provides the opportunity to develop and implement management action plans. This effect is considered when developing and analyzing the Estimate to Complete (ETC).

Intent of Guideline: Corporate decisions concerning rate adjustments and rate forecasts are conveyed to the program management team. The program incorporates indirect rate adjustments into the Performance Measurement Baseline. The program's indirect cost variance is the portion of the total cost variance attributed to indirect rate adjustments.

When an indirect rate change occurs, the program conducts an impact analysis by indirect rate category consistent with internal procedures to determine the contribution of indirect cost variance to the overall program. The indirect impacts on performance should be visible in the control account analysis (see Guideline 18) if identified as a driver of the variance. Additionally, this information should be used to update control account Estimates at Completion (EACs) (see Guideline 20) and the management EAC (see Guideline 23). Program level indirect variance analysis calculates the difference between budgeted, actual, and forecasted indirect costs, as well as identifies any mitigating action to minimize the impacts.

Attributes

- Analysis of indirect cost variances at the program level, by indirect category, is when a rate change occurs.
- Indirect variance analysis identifies its impact on the program considering cost performance and EAC as well as any actions planned to mitigate the variance.
- Indirect variance analysis at the program level with insight into the contributing drivers and impacts to the variance at completion.

Typical Work Products

- Contractor's Cost Accounting Standards Board Disclosure Statement/accounting procedures
- Forward Pricing Rate Proposal/Forward Pricing Rate Agreement
- Accounting policies and procedures
- Program Management reporting of indirect cost impacts to contract
- Evidence of corrective actions resulting from indirect variances

5.4 GUIDELINE 20: UPDATE ESTIMATES AT COMPLETION FOR CONTROL ACCOUNTS AND SUMMARY LEVEL PLANNING PACKAGES

EVMS Category: Analysis and Management Reports

EIA Standard Guideline: 2.4d

Using the results of control account variance analysis and indirect performance evaluations, update the control account estimates at completion to reflect future resource requirements to complete the remaining authorized work and, by comparing to budgets, calculate the variance at completion.

DoD Strategic Intent

Purpose of Guideline: To ensure estimates of the cost to complete the remaining requirements for Control Accounts (CAs) and Summary Level Planning Packages (SLPPs) are reassessed monthly. Estimates to Complete (ETCs) are time-phased in accordance with the expected completion dates and remaining authorized work.

Management Value: Timely, accurate, reliable, and auditable estimates support the Government's ability to sufficiently execute the program and enhance internal management's visibility into critical resource requirements (e.g., funding, labor resources, facilities, etc.). A properly established and maintained Estimate at Completion (EAC) ensures continuing visibility into the resource requirements needed to mitigate cost and schedule issues, risks, or opportunities which contribute to program success for both the Government and the Contractor.

Intent of Guideline: Developing the SLPP or Control Account level EAC is a critical part of program management as it provides insight into future resource requirements when a program is experiencing deviations from the baseline plan. The EAC is based on the Actual Cost of Work Performed (ACWP) to date plus the ETC for the remaining authorized work. At a minimum, direct costs are collected at the control account (see Guideline 15). EACs are not constrained by funding, negotiated contract costs, or factored budgets (see Guideline 25).

Control Account Managers and SLPP managers review CA and SLPP EACs monthly. The CAMs update the monthly EAC based upon the monthly cycle of variance analysis, trends, schedule status, progress assessments, and resources. This includes assessing work package progress to date (see Guideline 14), reviewing the monthly ACWP (see Guideline 15), and evaluating the type and quantity of resources required to complete the authorized remaining work in the control account. It is important to note that even though a control account or SLPP manager may not see a need to modify future resources projections, maintaining an EAC is considered an update. Effectively maintaining the CA and SLPP EACs provides program management with timely, accurate, reliable, and auditable inputs into the Management EAC (see Guideline 23).

In the monthly business rhythm, work package and planning package ETCs are updated with hours and/or dollars, based upon the element of cost. Work package and planning package ETCs within a CA and SLPP ETCs are based on resources that are time-phased commensurate with schedule forecast dates. The critical path, near critical paths, and driving paths inform the Control Account Manager's (CAM's) prioritization of resources for schedule management, risk management, and facilitates resource requirements in ETC development (see Guidelines 6, 14, 18, and 23). During ETC development, CAMs identify cost, schedule, or technical risks and opportunities that may affect remaining authorized work (see Guideline 23).

Differences between the Budget at Completion (BAC) and EAC result in the CA and SLPP Variance at Completion (VAC). At a minimum, the VAC is calculated at the control account and SLPP levels. An analysis of the difference should include what underlying elements of work caused the deviation from the BAC and what corrective actions, if any, are being implemented to minimize the cost overruns (see Guideline 18).

Attributes

- SLPP and CA EACs reflect program progress, forecasted changes of the work remaining, and finish dates commensurate with remaining resources. This is supported by timely updates at the work package and planning package levels.
- The direct/indirect rates used for ETCs/EACs consider the latest information available.
- SLPP managers, CAMs, and program finance review and update EACs with current direct and indirect rates.
- CAMs and SLPP managers substantiate EAC update(s) with monthly review and analysis.
- Control Account and SLPP EACs are properly maintained to be timely, accurate, reliable, and auditable, and reflect program progress, as well as scope, schedule, and budget changes.
- VACs are calculated and analyzed with corrective actions at the control account (at a minimum).

Typical Work Products

- Integrated Master Schedule (IMS) focused on schedule forecast dates
- Evidence of justification and timely incorporation of EAC updates
- Internal and external management reports
- Subcontractor reports containing subcontract Estimates at Completion
- Management reports from cost tool
- Schedule status from the IMS

5.5 GUIDELINE 21: SUMMARIZE, REVIEW, AND EVALUATE PERFORMANCE AND VARIANCES

EVMS Category: Analysis and Management Reports

EIA Standard Guideline: 2.4e

Summarize, review, and evaluate the data elements and associated variances through the program work breakdown structure and/or organizational structure to support management needs and any customer reporting specified in the contract.

DoD Strategic Intent

Purpose of Guideline: To ensure that program performance status can be accurately summarized from the control account (at a minimum) through the Work Breakdown Structure (WBS) and Organizational Breakdown Structure (OBS) for program management insight and control as well as to meet customer reporting requirements.

Management Value: The availability of summarized Earned Value Management System (EVMS) data allows the Government and the Contractor to make management decisions based on the same information derived from the EVMS subsystems (see Guideline 4). Summarizing performance measurement data and variances by WBS and OBS allows program management to focus on effective analysis of performance measurement information and forecasting authorized work.

Intent of Guideline: It is critical that data used for internal management control and external customer reporting are derived from the same data resident in the EVMS. This data is comprised of Budgeted Cost for Work Scheduled (BCWS), Budgeted Cost for Work Performed (BCWP), Actual Cost of Work Performed (ACWP), Budget at Completion (BAC), and Estimate at Completion (EAC) that is summarized through the WBS and OBS from the control account through the contract level. Control account and/or summary level performance data and variance analysis are accurately summarized, reviewed, and evaluated to provide program management insight. The composite analysis will focus on the summarized data and variances at the level needed to support management actions throughout the WBS and OBS elements.

Attributes

- Performance measurement data, comprised of BCWS, BCWP, ACWP, BAC, and EAC, is summarized, reviewed, and evaluated from control accounts (at a minimum) through WBS and OBS hierarchies to the contract level for program management analysis and decision making.
- The performance measurement data elements reconcile between internal and external reports.

Typical Work Products

- Internal Performance Reports
- Integrated Program Management Data and Analysis Report
- Management reports from cost tool

5.6 GUIDELINE 22: IMPLEMENT CORRECTIVE ACTIONS

EVMS Category: Analysis and Management Reports

EIA Standard Guideline: 2.4f

Implement managerial actions taken as the result of earned value information.

DoD Strategic Intent:

Purpose of Guideline: To ensure all levels of program management are reviewing performance measurement data, implementing corrective action management plans, and using the information for decision-making purposes.

Management Value: A formal approach to preparing root cause analysis, determining impacts, establishing corrective action management plans, and tracking their resolution ensures management's visibility into program execution on a continuing basis. Early identification of cost, schedule, and technical risks permits program management to implement corrective action management plans in a timely fashion. Analysis of timely and accurate data facilitates effective assessment and decision-making at all levels of program management.

Intent of Guideline: Corrective action management plans indicate the program manager has recognized a cost or schedule variance is significant enough to require management actions through a closed-loop (identification through closure) corrective action management process. Corrective action management plans provide what, how, who, and when relative to management action(s) that are taken to address identified root causes and minimize their impact(s). The plans are documented, implemented, and monitored until resolution of the problem. An effective program management approach should ensure that the individuals responsible for implementing corrective actions have sufficient authority and control over the required resources used to resolve or recover from the performance deviation.

The program manager and all levels of management should review performance measurement data and take management actions in support of effective program execution. Identified cost, schedule, and technical risks should be incorporated into a formal risk management process. The program's internal reports and reports forwarded to the customer must indicate the overall cost and schedule impacts of program issues. Implementing corrective actions and assessing the effect is critical to ensuring the success of the program.

Attributes

- There is evidence of management decision-making based on the effective use and analysis of earned value information (at least on a monthly basis).
- Corrective actions, based on variances, are managed and tracked to resolution and closure.

Typical Work Products

- Internal Reports such as management action plans, review briefings, risk register, and corrective action management log
- Integrated Program Management Data and Analysis Report
- Integrated Master Schedule
- Variance analysis report

5.7 GUIDELINE 23: DEVELOP PROGRAM MANAGER ESTIMATE(S) AT COMPLETION

EVMS Category: Analysis and Management Reports

EIA Standard Guideline: 2.4g

Develop a revised estimate of cost at completion for all authorized work based on performance to date, estimates of future resource requirements, and an evaluation of program risks and opportunities. Compare this estimate with the contract budget base to identify variances at completion to support internal management needs, applicable customer reporting, and funding requirements.

DoD Strategic Intent

Purpose of Guideline: To ensure estimates of the cost to complete the remaining requirements on a program are periodically reassessed. A most likely estimate of the total cost for completing all authorized program work is maintained and reflects future impacts and risks/opportunities not yet captured in performance.

Management Value: Timely, accurate, reliable, and auditable estimates support the Government's ability to sufficiently fund the program and enhance internal management's visibility into critical resource requirements (e.g., funding, labor resources, facilities, etc.). A properly established and maintained Estimate at Completion (EAC) ensures continuing visibility into the resource requirements needed to mitigate cost and schedule issues, risks, and opportunities and contributes to program success for both the Government and the Contractor. A Schedule Risk Assessment (SRA) can help identify, mitigate, and eliminate project schedule risks and their associated cost impacts.

Intent of Guideline: EACs developed at the Summary Level Planning Package (SLPP) and Control Account (CA) level (see Guideline 20) are summarized through the Work Breakdown Structure (WBS) and Organizational Breakdown Structure (OBS) to the program level. At least monthly, the program manager's assessment of contract-level forecast builds upon the Performance Measurement Baseline (PMB) level EAC updated monthly or from the Comprehensive EAC (CEAC) and results in the Management EAC. The program manager's EAC includes a range of estimates: Best Case, Worst Case, and Most Likely, from which the Most Likely EAC is considered the official Management EAC. The Management EAC accounts for dollarized risks and opportunities that are related to the risk management process and are tracked at the program level but have not yet been realized or incorporated into control accounts. The Management EAC addresses identified risks/opportunities and estimates rather than merely projecting the expenditure of the remaining Management Reserve (MR). The substantiation of risks/opportunities cannot be confused with the intent to expend MR. The Management EAC used for internal and external reporting is based on the same risks/opportunities and can include other factors based on program manager insight. The program manager or designated manager should review, and update as needed, the EAC for Undistributed Budget (UB).

Management of risks/opportunities over the life cycle of a contract is an integral part of Earned Value Management (EVM). It allows for the execution of the contract within expectation of key stakeholders and program management. Risk/opportunity management considers the Integrated Master Schedule (IMS) which models the contract objectives, reflects a logical sequence of events, and considers identified cost and schedule risk/opportunities.

The critical path, near critical paths, and driving paths are evaluated by program management to inform decisions regarding risk, schedule, and resource management (see Guidelines 5, 14, 18, and 20).

At least annually, or more frequently if performance indicates that the current estimate is invalid, an assessment of the contract level EAC, also known as a comprehensive or bottom-up EAC, is accomplished. The CEAC provides program management assurance that all factors impacting the total cost to complete program objectives have been considered. The CEAC should have a degree of formality that is differentiated from the monthly EAC process. This should include, but not be limited to, ground rules and assumptions for the CEAC approach, an overall schedule for completing the CEAC, identification of documentation that will be used to update the EAC, and the final approval process. This is done by considering many of the same factors included in the monthly evaluation of the control account as well as:

- Evaluation of both direct and indirect performance to date efficiency achieved by performing organizations for completed work and comparing it to remaining budgets and scope of work.
- Assessment of commitment values for material to complete the remaining work.
- Evaluation of subcontractor assessments of cost to complete their efforts. For the major subcontracts, the prime contractor control account manager is responsible for ensuring timely and reliable EACs for situations when the subcontractor has not provided their most current information available.
- Assessment of rate and volume variance analysis when determining labor estimates to complete.
- Assessment of price and usage variance analysis when determining material estimates to complete.
- Incorporation of program risks/opportunities that have not yet been incorporated into the cost and schedule baseline.
- Facility improvements or other capital investments that may improve cost and schedule performance in the future.
- Estimation of future conditions to derive the most accurate estimates at completion (e.g., projected rate changes, process improvements that may result in reduced costs, or other economic factors that may impact future costs).

Program managers and program finance evaluate the Variance at Completion (VAC) at the program level and identify drivers, impacts, corrective actions, and mitigation strategies to minimize future cost and schedule impacts (see Guideline 18).

Attributes

- Management EACs (Most Likely, Best Case, and Worst Case) are properly maintained to be timely, accurate, reliable, and auditable and reflect program progress, as well as scope, schedule, and budget changes.
- The program manager and program finance review and update EACs for current direct and indirect rates.
- VACs are calculated and variances analyzed with corrective actions at the program level.
- Projected risks/opportunities incorporated into the monthly Management EAC are substantiated by the risk/opportunity management process.
- Contractor's externally reported EAC and internal EAC reconcile and have a clear consistent relationship based on the identified risks/opportunities or other identified factors.

Typical Work Products

- Risk/opportunity register
- Integrated Master Schedule focused on schedule forecast dates
- Evidence of justification and timely incorporation of Estimate at Completion (EAC) updates
- Internal and external management reports
- Subcontractor reports containing subcontract EACs
- Ground rules and assumptions supporting Comprehensive EACs
- Management reports from cost tool
- Contract Funds Status Report
- Forward Pricing Rate Proposal/Forward Pricing Rate Agreement
- Indirect cost variance data

6 EVMS GUIDELINES: REVISIONS AND DATA MAINTENANCE CATEGORY (Guidelines 24 through 27)

The Revisions and Data Maintenance category focuses on maintaining an accurate and reliable Contract Budget Base (CBB) and Performance Measurement (PMB) throughout its period of performance. The objective of the four guidelines (24 through 27) is to establish the requirements for implementing a formal change control process that will preserve the integrity of the PMB and corresponding Earned Value Management System (EVMS) data. These guidelines ensure that the PMB reflects the most current plan for accomplishing the effort thus providing credible performance measurement data that management can rely on to make program-related decisions.

As the PMB is the agreed-upon plan between the contractor and government for how contractually authorized work is accomplished and measured, any changes to the plan are formally controlled and properly documented using a systematic approach. The PMB must reflect all authorized work scope through ensuring authorized contractual changes are incorporated into budgets, schedules, work authorizations, and other program documents in a timely manner prior to the commencement of that work (Guideline 24). Implementation of the Revisions and Data Maintenance guidelines requires the contractor to use a disciplined change control process that maintains the integrity of cost and schedule data when incorporating authorized revisions to the program's scope, schedule, and/or budgets (Guideline 25). To maintain the accuracy/validity of performance measurement data, and its use for making reliable cost/schedule projections, retroactive changes to the data are controlled and limited to only certain circumstances (Guideline 26).

The source of revisions to the PMB can be either internally or externally driven and may affect all categories of an EVMS. Consistent and systematic use of a baseline change control process prevents unauthorized revisions to the CBB and PMB (Guideline 27) (see Reference (n) for more detailed information regarding implementation of an Over Target Baseline/Over Target Schedule as discussed in Guideline 27). It is important that authorized baseline revisions are documented, managed, tracked, and reported to the program manager and the government in a timely manner (Guidelines 26 and 27).

Subsections 6.1 through 6.4 describe Department of Defense's interpretation of the intent of each of the four Revisions and Data Maintenance guidelines and expectations for implementing each guideline.

6.1 GUIDELINE 24: INCORPORATE CUSTOMER DIRECTED CHANGES IN A TIMELY MANNER

EVMS Category: Revisions and Data Maintenance

EIA Standard Guideline: 2.5a

Incorporate customer directed changes in a timely manner, documenting and reconciling the effects of such changes in scope, schedule, and budget. When incorporating a customer directed change prior to negotiation, plan the work based on the estimated value of the scope.

DoD Strategic Intent

Purpose of Guideline: To ensure authorized changes are accurately incorporated into the Contract Budget Base (CBB) and program schedule in a timely and systematic manner. Implementing a disciplined change control process assures that the CBB (Performance Measurement Baseline (PMB) plus Management Reserve (MR)) is up to date and that performance measurement data reflects all authorized work scope.

Management Value: A properly maintained CBB is crucial to effective program management. The timely and accurate incorporation of contractual changes ensures that the information generated from the execution of the baseline plan provides an accurate picture of progress and facilitates appropriate management actions and decisions.

Intent of Guideline: The timely and accurate incorporation of contractual changes into budgets and schedules in the PMB maintains the integrity of the baseline plan. Contractual changes should contain the most current rates as proposed to or approved by the cognizant Contracting Officer for planning purposes. Undistributed Budget (UB) is distributed to Summary Level Planning Packages (SLPPs) and control accounts in a timely manner following Authorization to Proceed (ATP) for a change order, letter contract, or negotiations and definitization of a contract action. Authorized changes are incorporated into schedules, budgets, work authorization documents, and other program documentation as needed to reflect the new work scope properly. This provides performance measurement data that accurately reflects the status of all currently authorized work. Any modification to the CBB or PMB includes the authorized work scope, period of performance, and associated budget. Incorporating customer-directed changes does not arbitrarily justify a decision to also implement a single point adjustment that eliminates existing cost and schedule variances (see Guideline 26). External changes resulting in a descope from the CBB are removed using the baseline rates of the affected scope.

The changes to the CBB in the form of Authorized Unpriced Work (AUW) must accurately identify all authorized changes to the scope on contract. AUW scope and associated budgets should align to the proposed values without constraint of funding or Not-to-Exceed (NTE) limitations. Contractors develop a best estimate for the total cost of the new work scope for planning, scheduling, and budgeting purposes. Just as incrementally funded contracts should establish a CBB for the entire scope of work, the budget established for AUW must represent all the new scope of work identified in the AUW.

In instances where the scope, schedule, or budget is not fully defined, the distribution of budget authority into control accounts may not be practical. Authorized work scope and budget relationship is maintained when removed from distributed budget into UB and should not be confused with funding considerations. The disposition may require time before UB is reduced following negotiations. Changes should never result in negative UB or MR values (see Guideline 12).

The PMB should always reflect the most current plan for accomplishing the effort. Authorized changes are incorporated into the PMB and authorization documents updated accordingly before the commencement of work. Documented changes made to the PMB are traceable and substantiated. A baseline change control process governs authorized changes to work scope, period of performance, and budget in the CBB.

Attributes

- Authorized work scope, schedule, and budget changes are incorporated in the PMB, the WBS, and the Integrated Master Schedule as soon as practicable.
- UB is distributed to or removed from control accounts or SLPPs as quickly as practicable.
- Authorized but not fully negotiated changes are based upon the contractor's best estimate of the scope, schedule, and budget.
- Authorized but not fully negotiated changes to scope, schedule, and budget are detail planned in the near-term and incorporated into Planning Packages/SLPPs.
- Timely and authorized changes incorporated into the PMB are properly documented to the control account level and are traceable throughout the system in accordance with procedures.

Typical Work Products

- Contract modifications, authorization letter, and amended Statement of Work
- Baseline change documentation (e.g., revised control account plan(s), schedules, work authorization document(s), etc.)
- Work Breakdown Structure, Organizational Breakdown Structure, responsibility assignment matrix, work authorization documentation, control account plans
- Program change control logs
- Internal management reports
- Internal contract level authorization (above control account work authorization)
- Integrated Program Management Data Analysis Report
- Integrated Master Schedule

6.2 GUIDELINE 25: DOCUMENT AND RECONCILE INTERNAL REPLANNING CHANGES

EVMS Category: Revisions and Data Maintenance

EIA Standard Guideline: 2.5b

Document and reconcile changes to current scope, schedule, and budgets as a result of internal replanning.

DoD Strategic Intent

Purpose of Guideline: To ensure the ongoing integrity of the Contract Budget Base (CBB), budget traceability throughout the lifecycle of a program is maintained. Current budgets must reconcile to prior budgets in terms of changes to work scope, resources, schedule, and rates so that the impact of internal replanning is visible to all stakeholders.

Management Value: The need for accurate performance measurement requires that the CBB maintain a traceable relationship to the contract. As changes are made to the contract, the CBB is adjusted by the amount of change for the communication between the customer and contractor to remain valid. Effective implementation ensures programmatic control and traceability for maintaining the Performance Measurement Baseline (PMB) and performing the authorized scope, schedule, and budget. This enhances internal and external management confidence in the performance data that is used to make programmatic decisions. Using a disciplined, systematic change control process to document PMB changes assures that all program stakeholders are using the same cost, schedule, and technical baselines to measure contract performance.

Intent of Guideline: It may be necessary to perform internal replanning actions within scope of the authorized contract (CBB or Total Allocated Budget (TAB)) to compensate for cost, schedule, and technical issues which have caused the technical approach to become unrealistic; or which require a reorganization of work or people to increase efficiency of operations; or which require different engineering or manufacturing approaches. Internal replanning is intended to maintain an executable baseline for the remaining in-scope work on the contract.

Baseline changes are controlled and understood in terms of their impact on scope, schedule, and resources. Current budgets must reflect current levels of authorized work based on resources needed to complete that work and are traceable to original authorized scope, schedule and budgets. The ability to track budget values for both internal and external changes is necessary to properly maintain the CBB from contract start to completion. Contract budget log(s) provide traceability of authorized baseline changes. Application of indirect rates, baseline or current, for changes to future work are defined in contractor processes. Baseline changes are traceable with authorizing documents and through supporting budget log(s). When Management Reserve (MR) transactions are part of a baseline change, they are appropriate and accurately tracked in applicable logs and reports. The use of the Undistributed Budget (UB) to process changes provides traceability and enables reconciliation from the current value of the CBB back to the original value (see Guideline 12).

Continuous planning processes (e.g., rolling wave, block planning, etc.) may be used to convert Summary Level Planning Packages (SLPPs) into control accounts and control account planning packages into work packages. These planning processes ensure work is detail planned at the earliest practicable time and prior to both the freeze period and the baseline or actual start of work. The extent of the detailed planning is determined by the nature of the work and should be planned as far into the future as practical. Once work packages are defined and budgeted, controls are established to minimize further changes to scope, schedule, or budget.

When continuous planning processes are executed, there is a means to reconcile the new planning (scope, schedule, and budget) in the control account to previous values for the associated work packages and planning packages. This is especially true if the resulting total value of the control account changes as a result of this planning process.

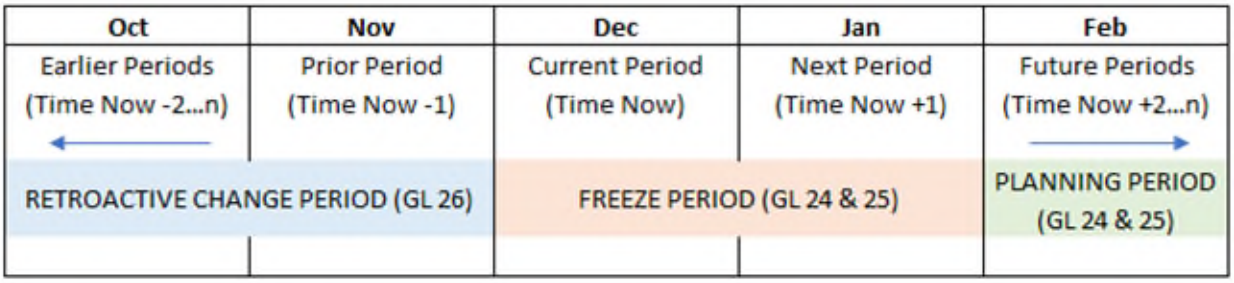
To ensure PMB stability for accurate performance measurement, the system description must describe and establish a freeze period suitable for forward planning discipline and the integrity of the PMB. The length of the freeze period is dependent on the baseline planning and control methods the company applies to contracts.

Baseline changes within the freeze period are limited (e.g., customer-directed contract actions, rate changes, and economic price adjustments) (see Figure 11: Notional Freeze Period).

Work packages planned as Level of Effort (LOE) are proactively managed to ensure the resulting overall progress assessment is accurate and the time-phasing properly reflects when the work will be accomplished. If budgets for LOE effort are in the current period (baseline start or finish) and the support work is not necessary to be performed in this period as well as future periods, then the work may be replanned as long as no actual costs for that effort have been previously incurred. If actuals have been incurred, the work may be replanned only in the future periods to reflect when the remaining work is expected to be performed.

Future periods are any accounting periods beyond the freeze period. Due to the importance of maintaining a valid baseline for performance measurement, internal replanning is accomplished in a systematic and timely manner and is carefully controlled. Internal replanning should not be used as an alternative to proper initial planning, nor should it be used to mask legitimate variances. The contractor should define the process for internal replanning, related to setting Budgeted Cost for Work Scheduled (BCWS) equal to Budgeted Cost for Work Performed (BCWP) (not the reverse) when eliminating schedule variances for in-process work.

Figure 11: Notional Freeze Period



The PMB should always reflect the most current plan for accomplishing the effort. Authorized changes are incorporated into the PMB and authorization documents updated accordingly before the commencement of work. Documented changes made to the PMB are traceable and substantiated. A baseline change control process governs authorized changes to work scope, period of performance, and budget in the CBB.

Attributes

- Currently authorized scope, schedule, and budget relationships are reconcilable to the prior scope, schedule, and budget relationships.
- MR and UB transactions are appropriate and accurately tracked in applicable logs and reports.
- The most current indirect rates are reconcilable as applied to future planning efforts.
- Effective controls are in place to restrict changes to work scope and budgets for open work packages.
- The PMB is effectively controlled in the freeze period to prevent multiple continuing adjustments with proactive and timely baseline maintenance activities.
- Effective forward planning discipline is maintained with consideration to the size and complexity of the acquisition and the program business rhythm to ensure baseline integrity.
- Budgets and time-phasing for work packages planned as LOE are proactively managed to avoid inaccurate performance measurement.
- Timely and authorized changes incorporated into the PMB are properly documented to the control account level and are traceable throughout the system in accordance with procedures.

Typical Work Products

- Contract Modifications
- Program Change Control Logs
- Updated work authorization documentation
- Updated Control account plans
- Baseline change documentation (e.g., revised control account plan(s), schedules, work authorization document(s), etc.)
- Budget Logs
- Management reports from cost tool

6.3 GUIDELINE 26: CONTROL RETROACTIVE CHANGES

EVMS Category: Revisions and Data Maintenance

EIA Standard Guideline: 2.5c

Control retroactive changes to records pertaining to work performed that would change previously reported amounts for actual costs, earned value, or budgets. Adjustments are made only for correction of errors, routine accounting adjustments, or effects of customer or management directed changes, including implementation of a single point adjustment.

DoD Strategic Intent

Purpose of Guideline: To ensure retroactive changes to previously reported data are limited to maintain the credibility of using data to project future cost and schedule performance. The changes should be limited to correction of errors, routine accounting adjustments, customer-directed changes, definitization of contract actions, rate changes, economic price adjustments, or implementation of a single point adjustment (SPA).

Management Value: Controlling retroactive changes to budgets or costs for completed work maintains the validity of historical Earned Value Management System (EVMS) cost and schedule variance trends and reflects true program performance. A stable baseline and performance information against that baseline are essential to both internal and external management if informed decisions are going to be made based on the analysis of the system-generated information. Establishment of internal controls over retroactive budget and performance adjustments will help maintain visibility of overall project variance from plan. Uncontrolled changes to the Performance Measurement Baseline (PMB) limit the ability to conduct predictive analysis.

Intent of Guideline: Retroactive changes involve adjustments to previously reported values for Budgeted Cost for Work Scheduled (BCWS), Budgeted Cost for Work Performed (BCWP), or Actual Cost of Work Performed (ACWP) related to completed work (see Guideline 25). Retroactively changing data may be necessary under certain conditions (e.g., correction of errors, routine accounting adjustments, customer-directed changes, definitization of contract actions, rate changes, economic price adjustments, or implementation of a SPA) and is controlled by the contractor's formal change control procedures. These procedures must ensure existing cost and schedule variances are not arbitrarily eliminated. Adjustments resulting from definitization of contract actions should be limited to affected scope, schedule, and budgets. Retroactive adjustments to BCWS and BCWP due to rate changes are made at the discretion of the contractor. Adjustments to ACWP are made either retroactively or in the current period based on the contractor's system description. Internal replanning of remaining portions of the PMB to account for significant changes in the anticipated rates is desirable, but not mandatory. This enables credible trend analysis for projecting future cost and schedule performance and accurate Estimates at Completion (EACs).

When using an automated material control system, controls for retroactive changes caused by Grouping, Pegging, and Distribution (GPD) parts re-prioritization, re-routing, and movement of direct costs and associated performance are defined in contractor procedures. These types of retroactive changes are traceable between the automated material control system and the EVMS (see Guideline 9 for additional information on GPD).

A single point adjustment is implemented sparingly and is the process that sets some or all existing contract cost or schedule variances to zero and typically accompanies a replan of all remaining effort resulting in a new PMB. If a contractor applies the concept of an SPA, proper controls need to be defined and practiced to avoid arbitrarily eliminating existing cost and schedule variances irrelevant to the change. For cost and schedule variances, set BCWS equal to BCWP equal to ACWP. For schedule variances, set BCWS equal to BCWP (not the reverse). The contractor provides advance notification to the contracting officer before implementation of an SPA.

Attributes

- A change control method exists that controls retroactive changes to previously recorded values for BCWS, BCWP, or ACWP, including documented approval and explanation in accordance with the baseline change control process.

Typical Work Products

- Program Budget and Change Control Logs
- Integrated Program Management Data and Analysis Report
- Management reports from cost tool
- Baseline change documentation (e.g., revised control account plan(s), schedules, work authorization document(s), etc.)
- General Ledger entry adjustments

6.4 GUIDELINE 27: PROPOSE OVER TARGET BASELINE OR OVER TARGET SCHEDULE

EVMS Category: Revisions and Data Maintenance

EIA Standard Guideline: 2.5d

When necessary, propose, document, and establish a total program budget greater than the contract budget base (over-target baseline) and/or a total program schedule exceeding the contractual period of performance (over-target schedule) to support management of the remaining authorized work. Advance notification must be provided to the customer prior to implementation.

DoD Strategic Intent

Purpose of Guideline: To prevent the incorporation of unauthorized revisions into the Contract Budget Base (CBB).

Management Value: Disciplined baseline change control helps maintain the relationship between the Total Allocated Budget (TAB) and contract value. This ensures the program manager is managing with performance measurement data that accurately reflects only the authorized contractual scope of work. Prior approval is required between the contractor and the Government for implementation of an Over Target Baseline (OTB) to prevent unauthorized increases to the TAB, causing it to exceed the CBB value and/or an Over Target Schedule (OTS), revising the baseline beyond the contractual milestones, delivery dates, and/or period of performance. This reinforces the mutual management of the program.

Intent of Guideline: The consistent and systematic use of a baseline change control process to implement changes prevents unauthorized revisions to the time-phased Performance Measurement Baseline (PMB). Unauthorized revisions could inadvertently result in baseline budgets or schedules that exceed the CBB. The CBB is a controlled value and cannot be changed by the contractor except as a result of customer contract actions.

There may be situations when available budgets for the remaining work are insufficient for successful execution of the current plan, and results in unrealistic or un-executable assessments of program performance. In these situations, the program managers may conclude that the PMB no longer provides meaningful cost or schedule performance data. It may be necessary for the TAB for the work to exceed the CBB, a condition known as an OTB, or for the baseline schedule to exceed contract milestones, a condition known as an OTS. The process of establishing either an OTB or OTS is called Formal Reprogramming and may be considered where improved insight and management control would result.

A thorough analysis of program status is necessary before the consideration of the implementation of an OTB or OTS. Requests for establishing an OTB or an OTS are initiated by the contractor and approved by the customer contracting authority. The process may include multiple decision points between the contractor and customer to initiate the request for an OTB or OTS and gain confidence and approval in the revised schedule and budget values. The Above Target Budget (ATB) represents the difference between the TAB and CBB. The ATB reflects all projected additional budget plus additional Management Reserve (MR), if added, in the post-OTB performance measurement budgets. The OTB and/or OTS are substantiated by the forecast Integrated Master Schedule (IMS) and the Comprehensive Estimate at Completion (CEAC) (see Guidelines 5 and 23).

In the case of the customer contracting authority not approving the OTB request, other management concepts such as factoring or internal operating budgets may be used. The prime contractor is responsible for approving and managing formal reprogramming for major subcontractors. Implementing an OTB or OTS does not change the terms and conditions of the contract but merely serves to improve management of the remaining work. For special considerations to reset variances or implement a Single Point Adjustment (SPA) for an OTB/OTS, refer to Guideline 26.

Attributes

- Customer approval is received from the Government prior to implementation of an OTB preventing unauthorized revision to the TAB, causing it to exceed the CBB value.
- Customer approval is received from the Government prior to implementation of an OTS preventing unauthorized revision of the baseline beyond the contractual milestones, delivery dates, and/or period of performance.

Typical Work Products

- Contract Modifications
- Work Breakdown Structure, Organizational Breakdown Structure, work authorization documentation, Integrated Master Schedule, control account plan
- Change control logs
- Basis and customer approval for Over Target Baseline, Over Target Schedule, Single Point Adjustment as applicable
- Integrated Program Management Data and Analysis Report
- Schedule Risk Assessment output

7 GLOSSARY

7.1 PART I. ACRONYMS

ACRONYM	TERM
ACWP	Actual Cost of Work Performed
ATB	Above Target Baseline
ATP	Authorization To Proceed
AUW	Authorized Unpriced Work
BAC	Budget at Completion
BCWP	Budgeted Cost for Work Performed
BCWS	Budgeted Cost for Work Scheduled
BOM	Bill of Materials
CA	Control Account
CAM	Control Account Manager
CAP	Control Account Plan
CAS	Cost Accounting Standards
CASB	Cost Accounting Standards Board
CBB	Contract Budget Base
CDRL	Contract Data Requirements List
CEAC	Comprehensive Estimate at Completion
CFSR	Contract Funds Status Report
COM	Cost of Money
CPR	Contract Performance Report
CSDR	Cost and Software Data Reporting
CWBS	Contract Work Breakdown Structure
CV	Cost Variance
DCMA	Defense Contract Management Agency
DFARS	Defense Federal Acquisition Regulation Supplement
DID	Data Item Description
DoDI	DoD Instruction
EAC	Estimate at Completion
EIA	Electronic Industries Alliance
EOC	Elements of Cost
ETC	Estimate to Complete
EVM	Earned Value Management
EVMS	Earned Value Management System
EVMSIG	Earned Value Management System Interpretation Guide
EVT	Earned Value Technique

ACRONYM	TERM
FAR FPRA FPRP	Federal Acquisition Regulation Forward Pricing Rate Agreement Forward Pricing Rate Proposal
G&A GAAP GPD	General & Administrative Generally Accepted Accounting Principles Grouping, Pegging, and Distribution
IC IMP IMS IPT IPMR IPMDAR	Intelligence Community Integrated Master Plan Integrated Master Schedule Integrated Product Team Integrated Program Management Report Integrated Program Management Data and Analysis Report
LOE	Level of Effort
M/ERP MR	Manufacturing/Enterprise Resource Planning Management Reserve
NCC NAVSEA NTE	Negotiated Contract Cost Naval Sea Systems Command Not To Exceed
OBS ODC OMB OTB OTS	Organizational Breakdown Structure Other Direct Costs Office of Management and Budget Over Target Baseline Over Target Schedule
PBOM PERT PMB POP PP	Priced Bill of Materials Program Evaluation and Review Technique Performance Measurement Baseline Period of Performance Planning Package

ACRONYM	TERM
RAM	Responsibility Assignment Matrix
SD SLPP SM SOW SPA SRA SUPSHIP SV SVT	System Description Summary Level Planning Package Schedule Margin Statement of Work Single Point Adjustment Schedule Risk Assessment Navy Supervisor of Shipbuilding Schedule Variance Schedule Visibility Task
TAB	Total Allocated Budget
UB UID	Undistributed Budget Unique Identifier
VAR VAC	Variance Analysis Report Variance at Completion
WBS WP	Work Breakdown Structure Work Package

7.2 PART II. DEFINITIONS

TERM	DEFINITION
ABOVE TARGET BUDGET	See reference (o)
ACCOUNTING PERIOD	The period of time during which actuals will be collected for transfer into the Earned Value Management System for reporting purposes.
ACTIVITY	See reference (o)
ACTUAL COSTS	See reference (o)
ACTUAL COST OF WORK PERFORMED (ACWP)	See reference (o)
ALLOCATED BUDGET	See *Total Allocated Budget.*
APPORTIONED EFFORT	See reference (o)
AUTHORIZATION TO PROCEED (ATP)	Official authority for the contractor to begin work. It is usually issued by the procuring contracting officer.
AUTHORIZED UNPRICED WORK (AUW)	See reference (o)
AUTHORIZED WORK	That effort that has been definitized and is on contract plus that effort for which definitized contract costs have not been agreed to but for which written authorization has been received.
BASELINE	See *Performance Measurement Baseline*.
BASELINE SCHEDULE	See reference (o)
BILL OF MATERIALS (BOM)	A listing of material items required to complete the production of a single unit. When actual or expected prices are applied, it becomes the Priced Bill of Materials (PBOM).
BLOCK PLANNING	See reference (o)
BUDGET AT COMPLETION (BAC)	See reference (o)
BUDGETED COST FOR WORK PERFORMED (BCWP)	See reference (o)
BUDGETED COST FOR WORK SCHEDULED (BCWS)	See reference (o)
CONTRACT BUDGET BASE (CBB)	See reference (o)
CONTRACT DATA REQUIREMENTS LIST (CDRL)	The standard format for identifying potential data requirements in a solicitation and deliverable data requirements in a contract. The purpose of the CDRL is to provide a standardized method of clearly and unambiguously delineating the Government's minimum essential data needs.
CONTRACT FUNDS STATUS REPORT (CSFR)	See reference (o)

TERM	DEFINITION
CONTRACT PERFORMANCE REPORT (CPR)	See reference (o)
CONTRACT TARGET COST	The program cost objective based on the negotiated contract cost, or the management goal value of the authorized work, plus the estimated cost of authorized unpriced work.
CONTRACT WORK BREAKDOWN STRUCTURE (CWBS)	See reference (o)
CONTRACTOR	An entity in private industry which enters into contracts with the government. In this guide, the word also applies to government-owned, government-operated activities which perform work on major defense programs.
CONTROL ACCOUNT (CA)	See reference (o)
CONTROL ACCOUNT MANAGER (CAM)	See reference (o)
CONTROL ACCOUNT PLAN (CAP)	See reference (o)
COST ACCOUNTING STANDARDS (CAS)	Requirements established by the CAS Board to ensure consistent and proper accounting for direct and indirect costs applied to government contracts.
COST ACCOUNTING STANDARDS BOARD (CASB)	An independently established statutory Board. The Board has the exclusive authority to make, promulgate, and amend cost accounting standards and interpretations designed to achieve uniformity and consistency in the cost accounting practices governing the measurement, assignment, and allocation of costs to contracts with the United States (41 U.S.C. 1501 et seq., formerly, 41 U.S.C. 422).
COST ACCOUNTING STANDARDS BOARD (CASB) DISCLOSURE STATEMENT	A written description of a contractor's cost accounting practices and procedures.
COST VARIANCE (CV)	See reference (o)
CRITICAL ACTIVITY	A discrete work package or planning package (or lower-level tasks/activities) that resides on the critical path.
CRITICAL PATH	See reference (o)
CRITICAL PATH ANALYSIS	See reference (o)
CURRENT PERIOD	See reference (o)

TERM	DEFINITION
CURRENT RATES	Current Rates are the contractors' approved or proposed rates for the fiscal year, which have been formally submitted to the cognizant Contracting Officer for consideration. Current rates are those that are used to establish the Performance Measurement Baseline (PMB) or to incorporate new scope into the PMB. These rates could be derived from the Current Forward Pricing Rate Proposal (FPRP) or Current Forward Pricing Rate Agreement (FPRA) provided the contractor has sound rationale in the selection of the rates used in the PMB. The Current rates represent the optimal available information known at the time for establishing a baseline for valid performance measurement.
DATA ITEM DESCRIPTION (DID)	A DID is a standardization document that defines the data required of a contractor. The DID specifically defines the data content, format, and intended use.
DETAIL PLANNING	See reference (o)
DIRECT COSTS	Any costs that may be specifically identified with a singular cost objective.
DISCRETE EFFORT	See reference (o)
DRIVING PATH	See reference (o)
EARNED VALUE MANAGEMENT (EVM)	See reference (o)
EARNED VALUE MANAGEMENT SYSTEM (EVMS)	See reference (o)
EARNED VALUE MANAGEMENT SYSTEM (EVMS) COMPLIANCE	The continuing implementation, operation, and maintenance of the contractor's EVMS in accordance with the 27 Guidelines in EIA-748.
EARNED VALUE MANAGEMENT SYSTEM (EVMS) GUIDELINES	See reference (o)
EARNED VALUE MANAGEMENT SYSTEM (EVMS) SURVEILLANCE	See reference (o)
EARNED VALUE TECHNIQUE (EVT)	See reference (o)
ELEMENTS OF COST (EOC)	See reference (o)
ENTERPRISE RESOURCE PLANNING (ERP)	See *Manufacturing/Enterprise Resource Planning (M/ERP) System*.
ESTIMATE AT COMPLETION (EAC)	See reference (o)

TERM	DEFINITION
ESTIMATE TO COMPLETE (ETC)	See reference (o)
ESTIMATED ACTUALS	See reference (o)
ESTIMATED COST (ESTIMATED ACTUAL)	See reference (o)
FORMAL REPROGRAMMING	See reference (o)
FORWARD PRICING RATE AGREEMENT (FPRA)	An agreement between a contractor and a government agency in which certain indirect rates are established for a specified period of time. These rates are estimates of costs and are used to price contracts and contract modifications.
FORWARD PRICING RATE PROPOSAL (FPRP)	A set of rates and factors established by the contractor and submitted to the Government for use bilaterally; by the contractor to price contracts and contract modifications.
FREEZE PERIOD	See reference (o)
GENERAL & ADMINISTRATIVE (G&A)	Per FAR Subpart 2.1: G&A expense means any management, financial, and other expense which is incurred by or allocated to a business unit and which is for the general management and administration of the business unit as a whole. G&A expense does not include those management expenses whose beneficial or causal relationship to cost objectives can be more directly measured by a base other than a cost input base representing the total activity of a business unit during a cost accounting period.
GENERAL LEDGER	A complete record of financial transactions over the life of a company. The ledger holds account information that is needed to prepare financial statements, and includes accounts for assets, liabilities, owners' equity, revenues, and expenses.
GENERALLY ACCEPTED ACCOUNTING PRINCPLES (GAAP)	The standard framework of guidelines for financial accounting used in any given jurisdiction; generally known as accounting standards or standard accounting practice.
GROUPING, PEGGING, AND DISTRIBUTION	Developed as a way to combine material requirements across projects for procurement, fabrication, and assembly purposes but still allow for exact cost assignment back to the originating requirement.
HORIZONTAL INTEGRATION	See reference (o)
INDENTURED PARTS LIST	See BOM
INDIRECT COSTS	Costs that cannot be identified specifically against a particular program or activity and are controlled and budgeted at a functional or organizational level.
INTER-COMPANY WORK	Inter-company work is effort (scope and schedule) under the control of a separate internal business component.
INTEGRATED MASTER PLAN (IMP)	See reference (o)

TERM	DEFINITION
INTEGRATED MASTER SCHEDULE (IMS)	See reference (o)
INTEGRATED PRODUCT TEAM (IPT)	A multidisciplinary team assigned management responsibility for one or more elements of an acquisition program.
INTEGRATED PROGRAM MANAGEMENT DATA AND ANALYSIS REPORT (IPMDAR)	See reference (o)
INTEGRATED PROGRAM MANAGEMENT REPORT (IPMR)	See reference (o)
INTERNAL OPERATING BUDGET	A budget that is less than or more than the total allocated budget. Internal operating budgets are intended to provide targets for specific elements of work where otherwise the targets would be unrealistic.
LABOR COST VARIANCE FORMULAE	See reference (o)
LEVEL OF EFFORT (LOE)	See reference (o)
MANAGEMENT RESERVE (MR)	See reference (o)
MANUFACTURING RESOURCE PLANNING (MRP)	See *Manufacturing/Enterprise Resource Planning (M/ERP) System*.
MANUFACTURING/ENTERPRISE RESOURCE PLANNING (M/ERP) SYSTEM	A method for the effective planning of all resources of a manufacturing contractor. It integrates planning of all aspects (not just production) of a manufacturing firm. It includes functions such as business planning, production planning and scheduling, capacity requirement planning, job costing, financial management and forecasting, order processing, shop floor control, time and attendance, performance measurement, and sales and operations planning.
MATERIAL CATEGORIES	Classes of material defined in the contractor's Earned Value Management System Description and Manufacturing/Enterprise Resource Planning System Description.
MATERIAL CONTROL SYSTEM	See *Manufacturing/Enterprise Resource Planning System*
MATERIAL COST VARIANCE FORMULAE	See reference (o)
MILESTONE	See reference (o)
NEAR-CRITICAL PATH	See reference (o)
NEGOTIATED CONTRACT COST (NCC)	See reference (o)
NETWORK SCHEDULE	See reference (o)
NOT TO EXCEED (NTE)	See reference (o)

TERM	DEFINITION
ORGANIZATIONAL BREAKDOWN STRUCTURE (OBS)	See reference (o)
ORGANIZATIONAL STRUCTURE	See reference (o)
OTHER DIRECT COSTS (ODC)	A cost that can be identified specifically with a final cost objective that is not treated as a direct material cost or a direct labor cost.
OVER TARGET BASELINE (OTB)	See reference (o)
OVER TARGET SCHEDULE (OTS)	See reference (o)
OVERHEAD	See *Indirect Cost*.
PERFORMANCE MEASUREMENT BASELINE (PMB)	See reference (o)
PERFORMING ORGANIZATION	The organizational unit that applies resources to accomplish assigned work scope.
PERIOD OF PERFORMANCE (POP)	The number of working days or calendar days, from a specified commencement date to a specified completion date, as provided for in a contract.
PLANNING PACKAGE (PP)	See reference (o)
PRICE VARIANCE	See reference (o)
PRICED BILL OF MATERIALS (PBOM)	See *Bill of Materials.*
PROGRAM BUDGET	The total budget for the program including all allocated budget, management reserve, and undistributed budget.
PROGRAM EVALUATION AND REVIEW TECHNIQUE (PERT) COST FORMULA	See reference (o)
PROGRAM TARGET COST	The program cost objective based on the negotiated contract target cost, or the management goal value of the authorized work, plus the estimated cost of authorized unpriced work.
RATE VARIANCE	See reference (o)
REPLANNING	A realignment of schedule based upon changes in execution or reallocation of budget for remaining effort within the existing cost and schedule constraints of the contract. In this case, the Total Allocated Budget does not exceed the Contract Budget Base, nor is the schedule adjusted to extend beyond the contractually defined milestones.
RESIDUAL MATERIAL	Material procured for a contract that becomes excess to the needs of the contract.
RESOURCE PLAN	The schedule for the planned expenditure of program resources for accomplishment of program work scope

TERM	DEFINITION
RESPONSIBILITY ASSIGNMENT MATRIX (RAM)	See reference (o)
RESPONSIBLE ORGANIZATION	The organizational unit responsible for accomplishment of assigned work scope.
RISK/OPPORTUNITY REGISTER	A risk/opportunity management tool used by the program manager and program personnel that provides a means of recording and quantifying the identified risks/opportunities.
ROLLING WAVE	See reference (o)
SCHEDULE	A plan that defines when specified work is done to accomplish program objectives on time.
SCHEDULE MARGIN	See Schedule Margin Task
SCHEDULE MARGIN TASK	See reference (o)
SCHEDULE RISK ASSESSMENT (SRA)	See reference (o)
SCHEDULE VARIANCE (SV)	See reference (o)
SCHEDULE VISIBILITY TASK (SVT)	See reference (o)
SINGLE POINT ADJUSTMENT (SPA)	See reference (o)
STATEMENT OF WORK (SOW)	Contractual document that defines the work scope requirements for a program.
SUBCONTRACTOR	An entity in private industry which enters into a contract with a prime contractor that has entered into a contract with the government. Subcontractor handling and the description of what constitutes a subcontractor (i.e., all suppliers may not be subcontractors) to the Prime should be documented in the EVM System Description.
SUMMARY LEVEL PLANNING PACKAGE (SLPP)	See reference (o)
SYSTEM DESCRIPTION (SD)	See reference (o)
TARGET COST	See *Contract Target Cost.*
TASK/ACTIVITY	See reference (o)
TIME-NOW	See reference (o)
TOTAL ALLOCATED BUDGET (TAB)	See reference (o)
UNDEFINITIZED WORK	Authorized work for which a firm contract value has not been negotiated or otherwise determined.
UNDISTRIBUTED BUDGET (UB)	See reference (o)
USAGE VARIANCE	See reference (o)

TERM	DEFINITION
VARIANCE ANALYSIS REPORT (VAR)	See reference (o)
VARIANCE AT COMPLETION (VAC)	See reference (o)
VERTICAL INTEGRATION	See reference (o)
VOLUME VARIANCE	See reference (o)
WORK AUTHORIZATION	See reference (o)
WORK BREAKDOWN STRUCTURE (WBS)	See reference (o)
WORK BREAKDOWN STRUCTURE (WBS) DICTIONARY	See reference (o)
WORK PACKAGE (WP)	See reference (o)

8 REFERENCES

ITEM	DOCUMENT TITLE
(a)	Electronic Industries Alliance Standard-748, "Earned Value Management Systems, EIA-748," Current Release
(b)	Executive Office of the President, Office of Management and Budget Circular No. A-11, "Preparation, Submission, and Execution of the Budget," July 2013
(c)	FAR Subpart 34.2, "Earned Value Management System", November 18, 2016
(d)	FAR Part 52.234-2, "Notice of Earned Value Management System – Pre-Award IBR," November 2016
(e)	FAR Part 52.234-3, "Notice of Earned Value Management System – Post-Award IBR," November 2016
(f)	FAR Part 52.234-4, "Earned Value Management System," November 2016
(g)	DoD Instruction 5000.85, "Major Capability Acquisition" November 04, 2021
(h)	DFARS Subpart 234.2, "Earned Value Management System," (DEVIATION 2026-O0011)
(i)	DFARS 252.234-7999, "Earned Value Management System," (DEVIATION 2026-O0011)
(j)	DI-MGMT-81861C, "Integrated Program Management Data and Analysis Report," August 30, 2021
(k)	DFARS 242.302 (a)(S-71), "Contract Administration Functions," August 2, 2016
(l)	Under Secretary of Defense Memorandum, "Use of Earned Value Management (EVM) in the Department of Defense," July 03, 2007
(m)	Under Secretary of Defense Memorandum, "Earned Value Management (EVM) Systems Performance, Oversight, and Governance," August 10, 2011
(n)	OUSD AT&L (PARCA), "Over Target Baseline and Over Target Schedule Guide," December 5, 2012
(o)	OUSD A&S DPCAP API IPM (2025, August 15). *Integrated Program Management Glossary* https://www.acq.osd.mil/asda/dpc/api/ipm/evm-definitions.html