



National Defense Industrial Association (NDIA)
Program Management Systems Committee (PMSC)
ANSI EIA 748 Intent Guide
Revision 9a

This draft Guide was created by the National Defense Industrial Association - Program Management System Committee to promote a clearer understanding of the ANSI/EIA-748A. For each of the 32 guidelines the Guide provides: the value to management, an intent statement, typical attributes, and examples of objective evidence. If you would like to contribute comments or constructive edits to this draft Guide please forward those to Peter A. Wynne, NDIA Industry contact at peter.a.wynne@imco.com (817) 935-5107 or Richard A. Zell, Government contact at richard.zell@dcma.mil (703) 428-1340.

April 2004

2.1 Organization

a. Define the authorized work elements for the project. A work breakdown structure (WBS), tailored for effective internal management control, is commonly used in this process.

Management Value:

The Work Breakdown Structure (WBS) is used as the basic building block for the planning of all authorized work. The WBS is a product-oriented division of project tasks depicting the breakdown of work scope for work authorization, tracking, and reporting purposes that facilitates traceability and provides a control framework for management. It ensures the Statement of Work (SOW) is entirely captured and allows for the integration of technical, schedule, and cost information. The WBS also facilitates communications as it establishes a common frame of reference for customers, management and Integrated Product Teams (IPT).

Intent: (1)

A WBS is a direct representation of the work scope in the project, documenting the hierarchy and description of the tasks to be performed and relationship to the product deliverables. The WBS breaks down all authorized work scope into appropriate elements for planning, budgeting, scheduling, cost accounting, work authorization, measuring progress, and management control. The WBS must be extended to the level necessary for management action and control based on the complexity of the work. Each item in the WBS is assigned a unique identifier. These identifiers can provide a structure for a hierarchical summation of costs and resources. A WBS dictionary defines the work scope for each element in the WBS.

Typical Attribute(s):

- One WBS used per project that contains all project work, (including revisions for authorized changes and modifications)
- WBS contains all contract line items and end items
- WBS identifies all WBS elements specified for external reporting
- WBS extended at a minimum to the control account level
- WBS elements include a complete definition of work scope requirements
- WBS will evolve as the project requirements change

Objective evidence may be found in these typical output(s):

- Work Breakdown Structure (WBS)
- WBS Dictionary (May or may not be used but a method to reconcile the SOW to the WBS structure must be demonstrated)

b. Identify the project organizational structure including the major subcontractors responsible for accomplishing the authorized work, and define the organizational elements in which work will be planned and controlled.

Management Value:

The Organization Breakdown Structure (OBS) is an organization framework for identification of accountability, responsibility > management, and approvals of all authorized work scope. The OBS helps management focus on establishing the most efficient organization by taking into consideration availability and capability of management and technical staff, including subcontractors, to achieve the project objectives.

Intent: (2)

Assign organizational responsibility for the project work. An OBS is used to facilitate the assignment of responsibility, accountability, and authority for all WBS tasks to be performed. An OBS is a direct representation of the hierarchy and description of the organizations established to provide resources to plan and perform the work tasks. The OBS identifies the organization responsible for each segment of work, including subcontracted and intra-organizational effort. The assignment of lower-level work segments to responsible managers provides a key control point for management purposes. This is called the Control Account (CA). When effort is subcontracted, the applicable subcontractor is identified and related to the appropriate WBS element(s) and/or organization charged with acquiring the subcontracted item.

Typical Attribute(s):

- All authorized work is assigned to organizational elements
- Organization elements are work teams, functions, or whatever organization units are used by the company for efficient execution of the program work efforts
- Major subcontractors are integrated into the program structure

Objective evidence may be found in these typical output(s):

- Organization Breakdown Structure (OBS)
- OBS identification to WBS

c. Provide for the integration of the company's planning, scheduling, budgeting, work authorization, and cost accumulation processes with each other, and as appropriate, the project work breakdown structure and the project organizational structure.

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 collection of actual costs facilitating management analysis and corrective actions. The WBS and OBS allow summarization of cost data from the detail level through the WBS and OBS to the appropriate project level needed for management insight and control.

Intent: (3)

Integrate the technical, schedule, and cost elements of the project through detailed, intermediate and summary project plans that include schedules, budgets, authorization of work, and accumulation of costs consistent with the budget plan. The work tasks are assigned to a WBS and OBS and are traceable to the scheduling system and the cost collection system. Establishment of control accounts at the intersection of the WBS and OBS facilitates the linkage between the planning, scheduling, budgeting, work authorization, cost accumulation, and performance measurement business processes. The Control Accounts should be determined by the scope of the management tasks.

Typical Attributes(s):

Provide a logical framework that links the products of the management processes through common data elements. For example a cross-reference between the Statement of Work (SOW) and the WBS, schedules tasks and PMB performance measurement tasks, detail schedules and Control Account Plans.

Objective evidence may be found in these typical output(s):

- Master, intermediate, and detail level schedules
- MRP/ERP operational schedules
- Control Account Plans
- Performance reports by WBS and OBS
- Responsibility Assignment Matrix (RAM)
- SOW
- Work Authorization
- WBS and OBS

d. Identify the company organization or function responsible for controlling indirect costs.

Management Value:

Visibility into direct and indirect costs is essential for successful management of a project. Therefore, it is important to have a documented process and organizations established specifically to manage and control indirect costs. Indirect costs are for common activities that cannot be identified specifically with a particular project or activity and should typically be budgeted and controlled separately at the function or organization manager level.

Intent: (4)

Clearly identify managers who are assigned responsibility and authority for controlling indirect costs (including overhead, burden and General Management and Administrative (G&A) costs) and have the authority to approve expenditure of resources. Document the process for management and control of indirect costs...

Typical Attributes(s):

- Indirect account structure and organizational assignment/authority level are clearly defined
- Documented process will clearly define:
- How overhead resources are assigned, budgets are established and expense is controlled
- Who is responsible within the organization for establishing overhead budgets and their authorities

Objective evidence may be found in these typical output(s):

- Cost Accounting Standards (CAS) Disclosure Statement
- Organizational Chart
- Chart of accounts

e. Provide for integration of the project WBS and the project OBS in a manner that permits cost and schedule performance measurement by elements of either or both structures as needed.

Management Value:

Integration of the WBS and OBS establishes the control account where the performance measurement necessary for project management is performed. This intersection results in designation of a focal point for management control; the Control Account Manager (CAM).

Intent: (5)

Integrate the WBS and OBS to facilitate schedule and cost performance measurement.

The control account is the point where the WBS tasks and OBS responsibility intersect. It is defined as the point where a single functional organization or Integrated Product Team has responsibility for work defined to a single WBS element. It is also the initiation point for work authorization, performance management, and measurement. The control account identifies the plan for work task accomplishment, includes a definition of the effort required, identifies element of cost (labor, material, etc.) and identifies the resources required to do the job. Each control account is assigned a CAM. The CAM is responsible for ensuring the accomplishment of work in his or her control account and is the focal point for management control.

Typical Attributes(s):

- Single control account is visible at the intersection of the WBS and OBS.
- Control Account clearly identifies any supporting activities
- The performance elements of cost are evident.

Objective evidence may be found in these typical output(s):

- Control Accounts
- RAM

2.2 Planning, Scheduling, and Budgeting

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

Management Value:

Scheduling authorized work facilitates effective planning, statusing, and forecasting which is critical to the success of all projects. The integration of the technical, schedule, and cost aspects of the project results in the expected sequence of work, and through the creation of relationships among tasks, significant interdependencies are established that determine total work time and related longest path through the project -the longest path (typically called critical path) represents the shortest project duration.

Intent: (6)

The scheduling process documents, and the resulting project schedule provides, a logical sequence of work leading to a milestone, event, and/or decision point, to ensure that the schedule supports the project objectives. There is a clear definition of what constitutes commencement and completion of a task. The schedule describes the sequence of discrete authorized work and their significant task interdependencies. Government Development programs typically schedule the discrete authorized work through the use of a network. Production programs typically schedule using an MRP or ERP tool and/or line of balance technique.

The master schedule must agree with the project definition, include all key events, and reflect a logical sequence of events. It is essential for monitoring progress, analyzing variances, and tracking corrective actions to ensure that all team members are working to the same project schedule.

Schedules add a timeline to the project plan to accomplish the technical scope, allow managers to evaluate actual progress against the established baseline, and to forecast completion dates for remaining work. No specific scheduling software is required, but there must be horizontal and vertical integration through the framework of the WBS and OBS.

Typical Attributes:

An integrated network scheduling system has the following characteristics:

- Distinct levels that can be summarized by WBS/OBS identifiers to track progress and measure performance
- The schedule reflects all the significant discrete work to be accomplished
- Critical target dates, milestone events and program decision points are identified and are being used to plan, monitor, status and progress the work
- The schedule describes the sequence of work through use of the significant interdependencies that are indicative of the actual way the work is accomplished

- Task durations and estimates are meaningful and are relatively short (short duration tasks are preferred and should be reflective of the ability to manage)
- Longer tasks need objective interim measures to enable accurate performance assessments.
- Resource estimates from the budget plan are reasonable and are available to support the schedule
- The baseline is reasonable to achieve project requirements as demonstrated through schedule analysis techniques
- The baseline schedule is the basis for measuring performance
- The schedule provides current status and forecasts of completion dates for all discrete authorized work
- The schedule can support the development of a critical path for Government development programs

Objective evidence may be found in these typical output(s):

- Integrated Schedules (master, intermediate (if any), and detailed)
- MRP or ERP scheduling or planned order reports
- Control Account Plans (detail schedules)
- Work Authorization Documents.

b. Identify physical products, milestones, technical performance goals, or other indicators that will be used to measure progress.

Management Value:

Objective indicators enable measurement of work accomplished, thereby allowing accurate comparison to planned work. Meaningful performance metrics enable better management insight and decision making ensuring that maximum time is allowed for management action to keep the project on plan.

Intent: (7)

Identify objective interim measures within tasks to enable accurate performance assessment each month. The master schedule includes key program and contractual requirements. It enables the team to predict when milestones, events, and program decision points can be expected to occur. In a development environment, lower tier schedules must contain specific task start and finish dates that are based on physical accomplishment and are clearly integrated with program time constraints. These tasks will align with the objective interim measures within long work packages to enable accurate performance assessment. A sufficient number of interim measures will be defined after the detailed schedule is established to ensure performance is measured as accurately as possible. Interim measures will be based on the completion criteria developed for each increment of work to provide a basis for objectivity, limiting the subjectivity of work accomplished. Accurate schedule status depends on the selection of objective measures of progress to indicate work completion. These measures are necessary to substantiate technical achievement against the schedule plan and justify progression to the next task. A key feature of an interdependent schedule is that it establishes and maintains the relationship between technical achievement and progress status.

Typical Attributes:

- Objective completion criteria are determined in advance and used to measure progress to determine achievement of milestones or other indicators
- Interim milestones and lower tier tasks serve as indicators of progress against which progress is monitored by the CAM

Objective evidence may be found in these typical output(s):

- Integrated Schedules (master, intermediate (if any), and detailed)
- MRP or ERP production planned order reports
- Control Account Plans (May be separate plans or detail schedules)

c. Establish and maintain a time-phased budget baseline, at the control account level, against which project performance can be measured. Initial budgets established for performance measurement will be based on either internal management goals or the external customer negotiated target cost including estimates for authorized but undefinitized work. Budget for far-term efforts may be held in higher-level accounts until an appropriate time for allocation at the control account level. On government projects, if an over-target baseline is used for performance measurement reporting purposes, prior notification must be provided to the customer.

Management Value:

The time-phased PMB that represents the planned scope of all authorized work and schedule provides the Program Manager a reference to assess project performance. It is controlled and reconciled to the target cost plus authorized unpriced work less management reserve. It represents the cumulative, time-phased, Budgeted Cost for Work Scheduled (BCWS). The PMB is a key tenet of earned value management.

Intent: (8)

The assignment of budgets to scheduled segments of work produces a plan against which actual performance can be compared. This is called the PMB. The establishment, maintenance, and use of the PMB are indispensable to effective performance measurement. The PMB should be in place as early as possible after project award or Authorization to Proceed (ATP). The relationship of individual work tasks with the time-phased resources necessary to accomplish them is established at the control account level. Control accounts should be planned, at least at a summary planning level, to the end of the contract. Any control accounts that cannot be established in the initial planning effort have the critical defining event(s) necessary for planning identified and made an item of continuing management interest.

The PMB is a vehicle for comparison of work accomplished with work scheduled, and actual cost with value of work performed. The PMB includes direct hours/dollars, direct material dollars, other direct charges, and any indirect costs for all authorized work. The PMB represents the formal plan of each CAM to accomplish all the work assigned in the amount of time allotted and within the amount of budget authorized.

When it is clearly impractical to plan authorized work in control accounts, budget and work will be identified to higher WBS or organizational levels for subdivision into control accounts at the earliest opportunity. The budget for this effort must be identified specifically to the work for which it is intended, be time-phased, its value periodically assessed, and controls established to ensure this budget is not used in performance of other work. The maintenance of realistic budgets, directly tied to an established scope of work, is essential for each organization responsible for performing project effort. Eventually, all the work will be planned by specific organizational elements to the control account level.

Planning horizons can be used to establish reasonable control account level assignments of work and budget. Summary Level Planning Packages level planning packages may be utilized until the information needed for detail planning becomes available. When that information is available, the detail work packages are planned as far in advance as practicable and planning packages are identified for the remaining work. Work should not commence until an initial detail plan is put in place. For authorized, unpriced work, the contractor will plan and budget near-term effort in control accounts, with the remaining effort and budget planned in summary level planning packages or maintained in undistributed budget (UB). Until definitization, the contractor will continually plan the near term work. After definitization, any budget remaining in UB will be planned and budgeted within control accounts as soon as practical.

During the life of a project, situations may arise whereby available budgets for the remaining work are insufficient to ensure valid performance measurement. Under these circumstances, a requirement may exist for the total budget allocated to work to exceed the recognized Contract Budget Base (CBB). The resulting value is referred to as an Over-Target Baseline (OTB). Establishment of an OTB may entail replanning future work, replanning in-process work, and/or adjusting variances (cost, schedule or both). This allows the project to increase the amount of budget for the remaining work to a more realistic amount to adequately provide for reasonable budget objectives, work control, and performance measurement.

A thorough analysis of contract status is necessary before the implementation of an OTB. The contractor must perform a detailed estimate of all costs necessary to complete the remaining effort. If the difference between the estimated cost to complete and the remaining budget is significant, the contractor will give advance notification to the appropriate parties of the need to increase the remaining budgets. It is important to ensure that both internal management and the customer have a common understanding of the OTB's impact on the performance metrics.

When both project managers are satisfied that the new baseline represents a reasonable plan for completing the contract, the new baseline becomes the basis for future performance measurement.

Attributes:

- PMB reflects the work scope, time phased consistent with the integrated schedule
- PMB reflects the budget value for the work scope in Control Accounts and higher level summary planning accounts
- Control Account budgets reflect the planned resources to perform the requirements and can exceed the CBB when an OTB is employed

Objective evidence may be found in these typical output(s):

- Control Account Plans
- Summary Level Planning Packages
- PMB
- Undistributed Budget (UB) Logs
- Customer notification of OTB

- Work Authorization Document
 - d. *Establish budgets for authorized work with identification of significant cost elements (labor, material, etc.) as needed for internal management and for control of subcontractors.*

Management Value:

An essential part of project planning and establishing a PMB is the establishment of budgets for all the work authorized. Identification of the budget cost elements documents the required resources and integrates work scope with the performing organization.

Intent: (9)

Through a work authorization process, establish budgets for all authorized work and identify the work to be done by the responsible organizational elements. Budgets and schedules are established and approved for all the authorized work at the control account level. The control accounts identify the appropriate cost elements (labor, subcontract, material, and other direct costs). It is important to include all resources required to accomplish the work scope.

Since control account budgets and schedules also establish the constraints required for baseline control, care must be exercised in the establishment of control account budgets to ensure a viable scope/effort correlation and prevent inadvertent front-loading of the baseline. When establishing control accounts, factors to consider include: the natural flow of work at this management control point; significant contract events that will be supported by completion of the effort within the control account; the need to ensure objective measurement of progress by establishing shorter assessment periods; and the rate structures to be applied to the control account resources.

Each control account contains resources necessary to complete the assigned effort and budgets reflecting these resources. Budgets established at the control account level must be planned by element of cost.

- (1) Budgets may be stated either in dollars, hours or other measurable units
- (2) It is necessary to use rates that will provide a valid PMB.
- (3) In general, the budget process provides for the following:
 - a. Direct budgets allocated to organizations performing the planned work;
 - b. Indirect budgets allocated to specific organizations having responsibility for controlling indirect costs; and
 - c. Identification of any management reserves or undistributed budget

Typical Attributes:

- Internal reports - Show budgets for each control account and that these budgets are reconcilable to the budget values shown on the latest control account/work package plans and in the Work Authorization Documents
- Control account/work package plans - Budgets are identified by element of cost (i.e., direct labor dollars/hours, material and/or subcontract dollars, and other direct costs)

- RAM (dollarized) - Represents the complete project plan and budget. The budget is based on detailed estimates of the amounts of labor, materials, and other resources required to complete each task
- Resource plan - Identifies the resources needed to accomplish the project and assigning resources to tasks listed in the Integrated Master Schedule
- Internal reports - Identify control account budgets that can be summarized to organizational elements. Differentiation is made between direct cost budgets and those which include indirect costs

Objective evidence may be found in these typical output(s):

- Control Account Plans (by element of cost)
- Work Authorization Documents
- PMB
- UB Logs
- Bills of Materials (BOM)
- RAM (dollarized)
- Resourced Schedules if resourced
- Resource plan (if resources not contained in Control Account Plans)

e. To the extent it is practicable to identify the authorized work in discrete work packages, establish budgets for this work in terms of dollars, hours, or other measurable units. Where the entire control account is not subdivided into work packages, identify the far term effort in larger planning packages for budget and scheduling purposes.

Management Value:

Budgets established at the work package level identifying specific resource requirements in dollars, hours or other measurable units provides the detail for effective execution of the baseline plan. The resource is to be phased the way the detail work is to be accomplished. This approach provides meaningful product or management-oriented events for performance measurement. Where a control account cannot be planned in detail work packages, the work budget and schedule requirements are held in planning packages.

Intent: (10)

Effort contained within a control account is distributed into either work packages or planning packages. Work packages are single tasks assigned to a performing organization for completion and should be natural subdivisions of control account effort resulting in a definable end product or event. Work package descriptions must clearly distinguish one work package effort from another. A key feature from the standpoint of evaluating accomplishment is the desirability of having work packages that incorporate frequent, objective indicators of progress. When work packages are relatively short, little or no assessment of work-in-progress is required. As work package length increases, work-in-process measurement becomes more subjective, unless objective techniques, such as, discrete milestones with preassigned budget values or completion percentages, subdivide them.

Each work package will have the following characteristics:

- It represents units of work at the level where work is performed
- It is clearly distinguishable from all other work packages
- It is assigned to a single organizational element or in an IPT environment there could be a single IPT responsible with multiple functional disciplines performing the scope of work.
- It has scheduled start and completion dates and, as applicable, interim milestones, all of which are representative of physical accomplishment
- It has a budget or assigned value expressed in terms of dollars, man-hours, or measurable units
- Its duration is limited to a relatively short span of time. Longer tasks need objective interim measures to enable accurate performance assessments, or it is Level of Effort (LOE)
- It is integrated with detailed engineering, manufacturing, or other schedules

Work for a given control account that cannot be planned in detail at the outset, will be divided into larger segments and placed into planning packages within the control account. Planning packages are aggregates of future tasks and budgets, beyond the detail plan, that will be divided into work packages at the earliest practical point in time. Time-phased budgets assigned to planning packages must be supported by a specified scope of work and this relationship must be maintained when detailed planning of the effort occurs.

Typical Attributes(s):

Control Account Plans (CAPs) represent the work assigned to one responsible organizational element on one program WBS element; the lowest level in the structure at which the comparison of actual costs to planned budgets and earned value are required; the cost collection point that will identify the cost elements and factors contributing to cost and/or schedule variances.

Work packages represent detailed jobs, or material items; units of work at levels where work is performed; clearly distinguishable from all other work packages; assigned to a single organizational element; has scheduled start and completion dates and, as applicable, interim milestones; has a budget or assigned value expressed in terms of dollars, man-hours, or other measurable units; duration is limited to a relatively short span of time, or it is subdivided by discrete value milestones to facilitate the objective measurement techniques of work performed, or it is LOE; is integrated with detailed engineering, manufacturing, or other schedules.

Planning package is the logical aggregation of work within a control account, normally the far-term effort, that can be identified and budgeted in early baseline planning, but can not yet be defined into discrete, apportioned, or LOE work packages. Planning package plans are to reflect the manner in which the work is to be performed.

Objective evidence may be found in these typical output(s):

- Control Account Plans (Divided into work packages and planning packages)
- Control Account schedules when used
- Control Account time phased budgets

f. Provide that the sum of all work package budgets plus planning package budgets within a control account equals the control account budget.

Management Value:

The integrity of the PMB is maintained when the budget of the control account equals the sum of its work package and planning package budgets. When budget of the control account equals the sum of its work package and planning package budgets it prevents duplicate recording of budgets.

Intent: (11)

All control accounts must contain a budget, schedule, and scope of work and should realistically represent the work assigned and budgeted to the organizational units. In all cases, the value of the budget assigned to individual work packages and planning packages within the control account must sum to the total value authorized for the control account. At no time should a CAM have a budget with no assigned scope of work.

Typical Attributes(s):

Control Account Plans (CAPs) represent the work assigned to one responsible organizational element on one program work breakdown structure element; the lowest level in the structure at which the comparison of actual costs to planned budgets and earned value are required; the cost collection point that will identify the cost elements and factors contributing to cost and/or schedule performance..

Objective evidence may be found in these typical output(s):

- Control Account Plan total budget
- Work package budget
- Planning package budget

g. identify and control level of effort activity by time-phased budgets established for this purpose. Only that effort which is immeasurable or for which measurement is impracticable may be classified as level of effort.

Management Value:

Meaningful product or management-oriented events are critical for performance measurement. Measurement of LOE activity is impracticable and provides no visibility into actual performance; therefore, its use must be minimized.

Intent: (12)

Each task on the project needs to be assessed for the best method to budget and measure its progress toward completion. LOE method is defined as having no measurable output or product at the work package level. LOE method must be limited to those activities that are unable to be measured discretely to avoid distorting project performance data. LOE method work packages should be separately identified from discrete method work packages and apportioned method work packages. Budgets for LOE activity must have a sound basis of estimate and be time phased to properly reflect when work will be accomplished.

Typical Attributes(s):

LOE work packages contain tasks of a general or supportive nature which do not produce definite end products, must be separately evaluated from discrete work packages within the Control Account, and contain time-phased budgets for planning and control.

- The amount of LOE activity will vary among performing organizations, but it must be held to the lowest practical level
- LOE budgets should be separately substantiated and planned as direct labor, material/subcontract, or other direct costs. LOE method should be budgeted on a time-phased basis for control and reporting purposes
- When LOE and discrete work packages are mixed within the same control account, the control account manager must ensure visibility into the earned value technique for measuring performance of the discrete effort
- The earned value technique for LOE work packages equals the time phased budget

Objective evidence may be found in these typical output(s):

- Control Account Plans (Identify LOE work packages and budgets)

h. Establish budgets for each significant organizational component of the company for expenses, which will become indirect costs. Reflect in the project budgets, at the appropriate level, the amounts that are planned to be allocated to the project as indirect costs.

Management Value:

Visibility into direct and indirect costs is essential for successful management of a project. Therefore, it is important to have a documented process and organizations established specifically to manage and control indirect costs. Indirect costs are for common activities that cannot be identified specifically with a particular project or activity and should typically be budgeted and controlled separately at the function or organization manager level.

Intent: (13)

Establish indirect (overhead, burden and G&A expense) budgets at the appropriate organizational level for each pool and sub-cost element. It is important to have an indirect budgeting and forecasting process, because indirect costs account for a major portion of the cost of any project. As such, the budgetary control and management of this category of cost cannot be overlooked or minimized. Indirect budgets on the project are established and planned with the established direct budgets consistent with the supplier's accounting procedures.

Typical Attributes(s):

- Organization charts are generally contained within the contractor's System Description identifying personnel or organizations responsible for maintaining indirect costs.
- Contractor's overhead policies and procedures are generally described in the contractor's System Description; represent a rational, traceable process.
- Cost Accounting Standards (CAS) established by the Cost Accounting Standards Board (CASB), ensures consistent and proper accounting for direct and indirect costs that are applied to government contracts; direct costs are any cost that may be identified specifically with a particular cost objective; indirect costs are costs which, because of their incurrence for common or joint objectives, are not readily subject to treatment as direct costs.
- CAS Disclosure Statement defines the content and processes of the contractor's management of indirect costs and generally includes a definition of indirect expenses and overhead pools.
- Forward pricing forecasts identify projected overhead rates beyond current year. _____

Objective evidence may be found in these typical output(s):

- Documented process for managing indirect costs
- Organizational structure identifying ownership responsibility and authority levels
- Indirect cost policies and procedures
- Chart of Accounts, Organizational charts
- Forward pricing forecast (including sales forecast and business base projections).
- CAS Disclosure Statement, if applicable
- Indirect budget and performance reports

1. identify management reserves and undistributed budget.

Management Value:

Project Managers must realize the PMB planning process contains risk and identify a management reserve contingency for unplanned activity within the project scope. This facilitates the maintaining of budgets for work accomplished and provides effective performance measurement data for management. In order to assure that budget for newly authorized efforts remains tied to the associated scope during the initial planning process, Undistributed Budget (UB) has been designated as the short term holding account. Once the responsible organizations) has been identified, the budget will transfer from UB to the appropriate control account(s). This ensures budget and scope will not be transferred independently.

Intent: (14)

Identify and control Management Reserve (MR) and UB. MR is budget for work scope that will arise during the course of the project, but cannot be identified in advance. Because MR is budget that is not as yet tied to work, it does not form part of the PMB. The MR budget should be commensurate with the level of risks identified by the project and/or withheld for management control purposes.

UB is budget that is applicable to specific project effort but has not yet been distributed to control accounts. It is a transient amount; because once it is distributed it ceases to be UB and instead is incorporated in its relevant control account. Because UB is budget that is tied to work, it does form part of the PMB. UB accounts are to be cleared in a reasonably timely manner. UB accounts are to be assigned to the PMB when the work is established in the PMB, normally within 90 days and prior to work starting. It is recognized that some circumstances, such as delays in contract direction will impact the timely assignment of UB to work packages.

Typical Attributes(s):

- Program Control Logs
 - o MR (showing month end values; monthly sources and uses, to the control account; current value)
 - o UB (showing month end values; monthly sources and uses, to the control account; current value),
 - o PMB (showing month end values; monthly changes from/to MR and UB; current value) and
 - o CBB (showing month end values; monthly changes identifying contract modifications; current value))
- Monthly performance reports (to verify starting and ending values are consistent with various logs).

Objective evidence may be found in these typical output(s):

- Project Control Logs (MR, UB, PMB and CBB)
- Cost Performance Reports (CPRs), if applicable.

j. Provide that the project target cost goal is reconciled with the sum of all internal project budgets and management reserves.

Management Value:

A project baseline that reflects the common agreement between the two parties provides a common reference point for progress assessment. It provides recognition of contractual requirements and precludes unauthorized changes to the PMB. The project target cost must be reconciled with the PMB and management reserve.

Intent: (15)

Reconcile the project value (target cost plus authorized, unpriced work) with the sum of all control account budgets, indirect budgets, management reserves, and undistributed budgets.

Typical Attributes(s):

- Program Control Logs
 - o MR (showing month end values; monthly sources and uses, to the control account; current value)
 - o UB (showing month end values; monthly sources and uses, to the control account; current value)
 - o PMB (showing month end values; monthly changes from/to MR and UB; current value)
 - o CBB (showing month end values; monthly changes identifying contract modifications; current value) reconciled to program target cost
- Contract and modification control logs identifying authorized target cost

Objective evidence may be found in these typical output(s):

- Project Control Logs (MR, UB, PMB and CBB) reconciled to project target cost
- Cost Performance Reports (CPRs), if applicable
- Internal report showing the summarization from cost account to PMB

2.3. Accounting Considerations

a. Record direct costs in a manner consistent with the budgets in a formal system controlled by the general books of account

Management Value:

Direct cost must be assigned to a project consistent with the budgets for effective performance management. A project cost-charging structure established in the accounting system ensures that actual costs collected are directly compared with associated budgets for that work.

Intent: (16)

Accumulate direct costs in the formal accounting system in a manner consistent with the way the related work is planned and budgeted. Actual cost reported in the CPR and other project performance reports agrees with the costs recorded in the General Books of Account (accounting system) or can be explained as timing differences.

Timing differences that may occur between accounting system and project performance reports are reconcilable.

Of particular interest is the accounting for material (at consumption, receipt, inventory acceptance, or inventory release). The basic requirement is to account for materials in a manner consistent with the way in which materials are budgeted.

Typical Attributes(s):

- Contractor's accounting manual/procedures identifying the methodology of handling various actual costs
- Contractor's CAS Disclosure Statement identifying treatment of direct costs (direct material, labor and other direct costs), indirect costs, depreciation and capitalization, and other costs and credits
- Control Account actual costs/general ledger reconciliation
- Contractor's process to ensure actual costs and performance are recorded in the same accounting period

Objective evidence may be found in these typical output(s):

- Reconciliation of project costs with accounting system
- Actual costs are reported at the Control Account level at a minimum

- jb When a work breakdown structure is used, summarize direct costs from control accounts into the work breakdown structure without allocation of a single control account to two or more work breakdown structure elements.*

Management Value:

- Actual costs need to be available at all levels of the WBS to support project management with performance measurement data. Cost collection accounts mapped to the WBS, and the WBS roll-up structure containing no division/allocation of lower-level cost to multiple higher-level WBS elements, ensures performance measurement data integrity when summarized by WBS.

Intent: (17)

A work order/job order/task code charge number structure must exist that uniquely identifies cost down to the control account level allowing for accumulation and summarization of costs to higher levels. Allowable costs collected within the control account by element of expense "roll-up" from the control account level through the WBS to the top level without being divided at any level among two or more higher-level elements. Cost collection accounts map to the WBS, and the WBS roll-up structure contains no division/allocation of lower-level cost to multiple higher-level WBS elements. When common costs are collected in separate control accounts for like items or services they are allocated to appropriate control accounts in each project.

Typical Attribute(s):

- Cost collection account structure showing charge number hierarchy
- WBS structure (roll-up scheme) showing hierarchy of WBS elements control accounts and work packages
- WBS/cost collection mapping showing the relation between charge numbers and control accounts and/or work packages
- The program established cost charging structure will ensure that actual costs are collected so that direct comparison with associated budgets can be made at the appropriate WBS level(s).

Objective evidence may be found in these typical output(s):

- Cost collection account structure
- WBS/cost collection mapping
- WBS structure (roll-up scheme)
- Monthly performance report

- c. *Summarize direct costs from the control accounts into the supplier's organizational elements without allocation of a single control account to two or more organizational elements.*

Management Value:

- Actual costs need to be available at all levels of the OBS to support project management with performance measurement data. Cost collection accounts mapped to the OBS, and the OBS roll-up structure containing no division/allocation of lower-level cost to multiple higher-level OBS elements, ensures performance measurement data integrity when summarized by OBS.

Intent: (18)

Allowable costs collected within the control account by element of expense "roll-up" from the control account level through the OBS to the top level without being divided at any level among two or more higher-level elements. This guideline and the one before it are identical, with the exception that this one deals with OBS data summarization while the previous one dealt with WBS data summarization. In either case the intent is the same: actual cost collected at the control account level may not be rolled up (i.e., summarized) to multiple higher-level elements. When common costs are collected in separate control accounts for like items or services they are allocated to appropriate control accounts in each project.

Typical Attributes(s):

- Organization charts showing the contractor's organizational hierarchal structure
- RAM showing the intersection of OBS organizations and WBS elements, which is the control account
- OBS structure (roll-up scheme) showing the relationship of charge numbers to the OBS
- The program established cost charging structure will ensure that actual costs are collected so that direct comparison with associated budgets can be made at the appropriate organizational level(s)

Objective evidence may be found in these typical output(s):

- RAM
- Organization charts
- OBS structure (roll-up scheme)
- Cost Performance Report (Format 2 where required)

d. *Record all indirect costs that will be allocated to the project.*

Management Value:

Visibility into direct and indirect costs is essential for successful management of a project. Therefore, it is important to have a documented process and organizations established specifically to manage and control indirect costs. Indirect costs are for common activities that cannot be identified specifically with a particular project or activity and should typically be budgeted and controlled separately at the function or organization manager level.

Intent: (19)

Record all indirect costs for the project in the accounting system. Allocate them to the recorded direct costs per the documented procedure to assure that all projects benefiting from the indirect costs will receive their fair share.

Typical Attributes(s):

- Cost collection account structure- Chargeable object for all cost centers
- WBS/cost collection mapping- Responsible organization for budgeting and controlling indirect cost, time-phased budgets/forecast established at same level as cost collection for comparison
- WBS structure (roll-up scheme)- Hierarchy scheme from point of allocation to WBS/OBS to total program level
- CAS Disclosure Statement- Allocation base and indirect cost pools by function element of cost
- Accounting procedures- Responsible organization for incurring indirect cost corresponds to the level of management control and categorizes fixed and variable cost methods of control
- Organization chart - Management responsibility for controlling indirect staff and ability to influence indirect costs

Objective evidence may be found in these typical output(s):

- Cost collection account structure
- WBS/cost collection mapping
- WBS structure (roll-up scheme)
- CAS Disclosure Statement

- e. *Identify unit costs, equivalent unit costs, or lot costs when needed.*

Management Value:

A manufacturing accounting system capable of isolating unit and lot costs in a production environment, allows the flexibility to plan, measure performance and forecast in a more efficient way when there are multiple projects in the same production line.

Intent: (20)

Identify unit costs, equivalent unit costs, or lot costs when needed. Where the work is budgeted by unit, equivalent units, or lot costs, as appropriate for the work being planned, ensure that the accounting system produces actual unit, equivalent unit, or lot costs for purposes of measuring cost performance to plan. When units are taken off the line in more or less a random order according to the delivery agreements of the different customers' projects, it is sufficient to establish "equivalent unit cost" (i.e., all things being equal, on a "mature" production run, each unit's cost is approximately equivalent to every other unit's cost).

Typical Attributes(s):

- Manufacturing Requirements Planning (MRP) - Project cost collection structure
- Enterprise Requirements Planning (ERP), etc. - Support the identification of unit costs, equivalent unit costs, or lot cost when needed including differentiation of work in process. Express in terms of labor, material, other direct cost, indirect cost, as well as distinguishes between recurring (e.g. production) and non-recurring (e.g. design, development, T& E) cost.

Objective evidence may be found in these typical output(s):

- Project cost collection structure (MRP)
- ERP, etc. support the identification of unit costs, equivalent unit costs, or lot costs when needed including differentiation of work in process

- f. *For EVMS, the material accounting system will provide for:*
- 1) *Accurate cost accumulation and assignment of costs to control accounts in a manner consistent with the budgets using recognized, acceptable, costing techniques.*
 - 2) *Cost performance measurement at the point in time most suitable for the category of material involved, but no earlier than the time of progress payments or actual receipt of material.*
 - 3) *Full accountability of all material purchased for the project including the residual inventory.*

Management Value:

Material items consumed in the production of project deliverables are accounted for and progress is measured at the point most closely aligned to the actual consumption. Residual inventory provides visibility into excess material for the current deliverables available for replacement of failures in the current project or future projects having similar deliverables.

Intent: (21)

Material accounting systems must adhere to these three characteristics. The material accounting system provides **full** accountability and effective performance measurement of all material (including residual inventory) purchased for the project. Material costs must be accurately charged to control accounts using recognized, acceptable costing techniques (e.g. performance recorded at receipt of material for high dollar material, or when material will be used within the same accounting period, material usage, or release to work in process that is consistent with the planned budget in the same accounting period that performance is claimed). When necessary, the use of estimated actual costs to ensure accurate performance measurement is required.

Typical Attributes(s):

- Performance reports- Material cost/schedule variance, earned value claimed in same accounting period of actual cost, material performance recorded no earlier than material receipt, issue from inventory, or material consumption
- Control Account Plans-Time-phased material budgets, earned value technique, High/Low material
- The Material System needs to account for various methods of charging material cost from inventory in accordance with Cost accounting standards inventory costing methods, i.e. FIFO, moving average, weighted average, standard cost, and LIFO. Identify accountability for all material purchased for the program including material issues to control accounts, return of unused material, scrap quantity and disposition, and residual inventory.

Objective evidence may be found in these typical output(s):

- Performance reports
- Control Account Plans
- Material System reports

2.4. Analysis and Management Reports

a. *At least on a monthly basis, generate the following information at the control account and other 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.*

Management Value:

Earned Value Management Systems (EVMS) performance data that reconciles to the general books of account (accounting system) and provides for management control. Visibility into project performance helps the project manager to focus resources on those areas in need of attention.

Intent: (22)

On at least a monthly basis, generate schedule variance and cost variance data that provide visibility into root causes and establish actions to achieve project completion. Accurate and reliable EVMS data supports management control needs by allowing the project manager to focus on those areas in need of attention. The first intent of this criterion is to establish the fact that analysis, to remain viable, must be accomplished on a regular, periodic basis. The second intent is to foster analyses and identification of root cause and resulting impacts at the control account level. Since the control account is normally the lowest level at which management and control responsibility exists for specific WBS increments of work, it is the logical point for not only the planning, scheduling, budgeting, and accounting efforts but also for the analysis effort as well. All data analyzed must be from, or be reconcilable with, the accounting system.

In order for CAM's to have full management control responsibility, they must be able to analyze the work performance and associated costs against the PMB. Since the control account is the level at which performance measurement is performed, the project manager must, as a minimum, ensure traceability of project performance down to the control account. However, analysis should be performed at the most meaningful level of the WBS, which may be determined by risk, critical path, technical performance metrics, or utilization of thresholds.

Typical Attributes(s):

Monthly Performance Report -

- BCWS, BCWP, ACWP(ACWP (reconcilable with accounting system),
- Cost Variance,
- Schedule Variance,
- Variance at Completion,
- Variance analysis narrative (root causes, impacts at completion, and management actions),
- Summarize performance measurement data from control account (minimum) through WBS/OBS hierarchy to program level.

Objective evidence may be found in these typical output(s):

- Monthly Performance Report (Cost Variance, Schedule Variance, and Variance at Completion analysis)
- Variance Analysis Data (root causes, impacts at completion, and management actions)

b. Identify, at least monthly, the significant differences between both planned and actual schedule performance and planned and actual cost performance, and provide the reasons for the variances in the detail needed by project management.

Management Value:

Effective analysis of deviations from plan for both schedule and cost provides management at all levels the ability to rapidly and effectively implement corrective actions to accomplish the project objectives with an understanding of the project risk and the causes of the risk.

Schedule Variance does not indicate when a completed activity is a critical event or if delays in activity's completion will affect the completion of the project. A scheduling system provides this data. It is predictive of the final outcome if future performance does not change.

Cost Variance is predictive of the final cost outcome if the future performance does not change.

Intent: (23)

At least monthly, identify any significant differences between the planned and actual time based schedule performance and associated cost. Comparison of schedule and associated cost impacts establishes an understanding of current project conditions. This understanding may help facilitate corrective actions, as necessary.

This guideline is to ensure time-based schedule management and analysis of significant scheduling differences. Comparing the budget value of work completed to the budget value of work scheduled during a given period of time provides a valuable indication of schedule status in terms of dollars worth of work accomplished. This variance may not, however, clearly indicate whether or not scheduled milestones are being met, since some work may have been performed out of sequence or ahead of schedule. Schedule variance does not indicate whether a completed activity is a critical event or if delays in an activity's completion will affect the completion date of the project. A formal time-phased scheduling system, therefore, must provide the means of determining the status of specific activities, milestones, and critical events. Schedule variance analysis must address the time impact to the schedule plan when a significant variance exists. By addressing the time impact for each significant variance a true and representative impact to the plan is quantified. A key concept in determining schedule variance is to ensure that work is planned in discrete elements that reflect actual accomplishment. This ensures ... ultimately reported. The analysis should identify potential schedule accomplishment and milestone problems.

Typical Attributes:

- Schedule and Cost Variances are identified at an actionable level
- Cause and impact are identified in sufficient detail needed for project management
- Corrective actions are assessed timely

Objective evidence may be found in these typical output(s):

- Variance analyses
- Management action plans
- Updated schedule and cost forecasts

- Project schedules and schedule analysis outputs
- c. Identify budgeted and applied (or actual) indirect costs at the level and frequency needed by management for effective control, along with the reasons for any significant variances.*

Management Value:

Ongoing indirect cost analysis provides visibility into potential indirect cost overruns and the opportunity to develop and implement management action plans to meet project objectives.

Intent: (24)

Indirect rate forecast and control is crucial to meeting project cost objectives. This guideline requires a monthly indirect analysis, at the level of assigned responsibility, comparing indirect budgets to indirect actual costs (with the stipulation that the cause of resultant variance be explained). The importance of analyzing indirect performance requires the exercise of maximum discipline in following indirect procedures.

Typical Attributes(s):

- Indirect variance analyses -
 - Budget to Actual comparison by element of cost from management control point up through WBS/OBS to project level
 - Variance thresholds by overhead category
 - Responsible overhead manager identifies root cause (i.e. usage variance, change in business volume, or rate variance due to a change in direct base)
- Indirect management action plans
 - Corrective action plans identified to reduce or eliminate variance
 - Performance metrics

Objective evidence may be found in these typical output(s):

- Indirect variance analyses
- Indirect management action plans
- Indirect updated schedule and cost forecasts

cl. Summarize the data elements and associated variances through the project organization and/or work breakdown structure to support management needs and any customer reporting specified in the project.

Management Value:

Variances provide an understanding of conditions, allowing the project manager to properly allocate available resources to mitigate project risk. They also identify significant problem areas from all levels of the organization and project scope of work, derived from the same data sources. Variances provide valuable management information.

Intent: (25)

Use the same data for internal management needs and for reporting to the customer. Since the WBS and the OBS exist as a formal and disciplined framework for a comprehensive roll-up of all data elements, they become the ideal framework for summarization of data from the control account level to the management reporting level.

Typical Attributes(s):

- Variance analyses- Internal/external reporting thresholds and narrative analysis providing root cause, impact, corrective action
- Schedule and Cost Performance Reports- SV, CV, VAC from control account up through WBS/OBS reporting structure hierarchy to total program level
- Management action plans-corrective action plan/mitigation plan, task, milestones, exit criteria, schedules

Objective evidence may be found in these typical output(s):

- Variance analyses
- Schedule and Cost Performance Reports
- Management action plans
- Updated schedule and cost forecasts

e. *Implement managerial action taken as the result of earned value information.*

Management Value:

Earned value information provides management with early insight into the extent of problems. Management action is required to mitigate the impacts on the project objectives.

Intent: (26)

Assess management actions and modify them as required to achieve project objectives. Earned value data must be utilized by all levels of management for effective project execution. Because of this, the data produced by the EVMS must be available to managers on a timely basis and must be of sufficient quality to ensure that effective management decisions can be made as a result of its analysis. The project's internal reports and the reports forwarded to their customer must indicate the overall cost and schedule impacts of such problems on the project.

Typical Attributes(s):

- Follow-up of the implementation to see if what was planned actually got implemented
- Reasonableness of the corrective action
- Validity of the problem identified

Objective evidence may be found in these typical output(s):

- To Complete Performance Index (TCPI)
- Independent completion estimates
- Risk management data and similar metrics
- Management action plans and review briefings
- Variance Analyses

f. Develop revised estimates of cost at completion based on performance to date commitment values for material, and estimates of future conditions. Compare this information with the performance measurement baseline to identify variances at completion important to company management and any applicable customer reporting requirements including statements of funding requirements.

Management Value:

Estimate at Completion (EACs) based on predictive performance measures increase the probability that the project can be executed within the reported EAC. When EACs are analyzed at least monthly and updated as required, the robustness of the financial reporting requirements is enhanced, thereby reducing the potential for "surprises." Monthly EAC reviews are essential for management decisions including the planning of project future funding requirements. Periodic comprehensive EAC assessment based on common program groundrules is beneficial for projecting future funding.

Intent: (27)

Monthly the CAM should review the status of the expended effort and the achievability of the forecast and significant changes briefed to Program Management. A comprehensive EAC is accomplished on a periodic basis using all available information to arrive at the best possible estimate at completion. This is done by (a) evaluating performance to date efficiency achieved by performing organizations for completed work and comparing it to remaining budgets; (b) assessment of commitment values for material to complete the remaining work; and (c) estimates of future conditions to derive the most accurate estimate at completion. Comparisons of this estimate to budgets for the associated effort must be made frequently enough for management to ensure project performance and resource availability will not be adversely impacted. Prudent maintenance of the control account level EAC by the CAM ensures that the EAC reflects a valid projection of project costs.

Typical Attributes:

- Timely and comprehensive assessments of the effort required for completing all work packages and planning packages in the Control Account Plan
- CAM updates the EAC to reflect changes in budget and/or Integrated Master Schedule when there is material significance.
- Time-phased ETC based on an analysis of remaining tasks in the Integrated Master Schedule and projected resource plan
- CAM should generate the EAC at the work package and planning package level and then sort and summarize by WBS and OBS to the control account level.
- CPR format totals for the EAC should reconcile with the corresponding time-phased resource plan

- EACs should consider all emerging risks and opportunities within the project's risk register (or other similar database) which will impact the Integrated Master Schedule and resource plan for the remainder of the work
- EAC results are communicated to the customer in internal reports and in funding documents.

Objective evidence may be found in these typical output(s):

- Control Account Plans
- Basis of Estimates
- Risk Management Plans (identification, mitigation and opportunities)
- Operational metrics
- Earned value metrics
- Estimates at Completion (EAC)
- Material and subcontractor performance data

2.5 Revisions and Data Maintenance

- a. *Incorporate authorized changes in a timely manner, recording the effects of such changes in the budgets and schedules. In the directed effort prior to negotiation of a change, base such revisions on the amount estimated and budgeted to the project organizations.*

Management Value:

- Incorporating authorized changes in a timely manner maintains the integrity of the PMB, and thus its effectiveness as a baseline against which to manage and control performance.

Intent: (28)

Incorporate the work scope for authorized changes into the PMB in a documented, disciplined and timely manner. Adherence to this guideline ensures that budget, schedule, and, and work remain coupled. For unpriced change orders, the supplier will develop its best estimate for planning and budgeting purposes for incorporation into the PMB. Incorporating changes will not arbitrarily eliminate existing Cost and Schedule Variances. Rate changes and economic price adjustments may also be made as appropriate.

Typical Attribute(s):

- Contractual change documents (External) - May take various forms, (e.g., contract modification, letter to proceed from contracts or legal, Not to Exceed letter, change order, engineering change order, delivery order, basic ordering agreement, etc.) which transmit and authorize the change or addition to work, budget and schedule
- Internal Supplier/Company EVM System documentation (e.g., change request form, program directive, etc.) facilitating the change - It should provide the rationale/justification, approval process, work scope additions or deletions by IPT or WBS, dollars, changes to schedules, Estimate at Completion, etc.)
- Basis of Estimate (if not yet negotiated)
- Change Control Logs - MR justification, \$ amount and receiving WBS, UB justification, \$ amount and receiving WBS, PMB \$ amount, and CBB total
- SOW (amendments or revisions to) - WBS (changes if applicable), WBS Dictionary (additions and/or deletions to scope)
- Work Authorization Documents - Authorizing new work scope, schedule, budget and Authorization to Proceed, if not already captured by the Internal change request process
- Control account/work package/planning package plans - Showing revised work scope, scope, duration and budget
- Master schedules, intermediate schedules (if any), and detailed schedules - Showing revised work scope and duration, changes to linkages, etc.

- Management reports (CPRs or other applicable management reports) - Showing timely incorporation of new work scope

Objective evidence may be found in these typical output(s):

- Contractual change documents
- Change Control Logs (MR, UB, PMB, and CBB)
- Control account/work package/planning package plans
- Master schedules, intermediate schedules (if any), and detailed schedules
- SOW, WBS, WBS Dictionary
- Work Authorization Documents
- Management reports (CPRs or other applicable management reports).

- b. Reconcile current budgets to prior budgets in terms of changes to the authorized work and internal replanning in the detail needed by management for effective control.*

Management Value:

The integrity of the current PMB can be verified by ensuring that budget revisions are reconciled.

Intent: (29)

Budget changes are controlled and understood in terms of scope, resources, and schedule. Budget reflects current levels of authorized work. Budget revisions are traceable to authorized contractual targets and control account budgets. MR may be used for future unopened work when additional in scope work has been identified and replanning actions cannot be handled within the existing budgets and schedule constraints of the control accounts.

Typical Attribute(s):

- Contractual change documents (External) - May take various forms, (e.g., contract modification, letter to proceed from contracts or legal, Not to Exceed letter, change order, engineering change order, delivery order, basic ordering agreement, etc.) which transmit and authorize the change or addition to work, budget and schedule
- Internal Supplier/Company EVM System documentation (e.g., change request form, program directive, etc.) facilitating the change - It should provide the rationale/justification, approval process, work scope additions or deletions by IPT or WBS, dollars, changes to schedules, Estimate at Completion, etc.)
- Basis of Estimate (if not yet negotiated)
- Change Control Logs - MR justification, \$ amount and receiving WBS, UB justification, \$ amount and receiving WBS, PMB \$ amount, and CBB total
- SOW (amendments or revisions to) - WBS (changes if applicable), WBS Dictionary (additions and/or deletions to scope)
- Work Authorization Documents - Authorizing new work scope, schedule, budget and Authorization to Proceed, if not already captured by the Internal change request process
- Control account/work package/planning package plans - Showing revised work scope, scope, duration and budget
- Master schedules, intermediate schedules (if any), and detailed schedules - Showing revised work scope and duration, changes revised work scope and duration, changes to linkages, etc.
- Management reports (CPRs or other applicable management reports) - Showing timely incorporation of new work scope

Objective evidence may be found in these typical output(s):

- Contractual change documents
- Change Control Logs (MR, UB, PMB, and CBB)

c. Control retroactive changes to records pertaining to work performed that would change previously reported amounts for actual costs, earned value, or budgets. Adjustments should be made only for correction of errors, routine accounting adjustments, effects of customer or management directed changes, or to improve the baseline integrity and accuracy of performance measurement data.

Management Value:

Retroactive changes to the baseline may mask variance trends and prevent use of the performance data to project estimates of cost and schedule at completion.

Intent: (30)

Control retroactive adjustments (including those in the current period) to costs, making only routine accounting adjustments (e.g. definitization of unpriced change orders, rate changes, and economic price adjustments), customer-directed changes, or data entry corrections. This is necessary to ensure baseline integrity and accuracy of performance measurement data. Retroactive budget adjustments may delay visibility of overall project variance from plan, thus reducing the alternatives available to managers for project redirection or termination.

Typical Attribute(s):

- Change Control Process - Policy regarding retroactive changes that include conditions for use or prohibitions, approvals and justifications, and evidence of discipline and control
- Change Control Logs - Records of change activity
- Budget Baseline (BCWS) projections - reflects actual recording of BCWS
- Scheduling system - Reflects schedule inputs concerning times, dates, durations, percentage complete, etc.
- Negative journal entries - When not a result of error corrections or routine accounting adjustments they have appropriate explanations
- Earned Value (often called BCWP) input source documents - Reflecting negative or inappropriate amounts have appropriate explanations.
- Management reports - Current period data on format 1 and format 3 of CPR will reflect any retroactive changes and format 5 for related explanations

Objective evidence may be found in these typical output(s):

- Change Control Logs
- Retroactive Change Control Process including approval

d. Prevent revisions to the project budget except for authorized changes.

Management Value:

Changes made outside the authorized baseline control processes compromise the integrity of performance trend data and delay visibility into overall project variance from plan, thus reducing the alternatives available to managers for project redirection or termination.

Intent: (31)

Prevent unauthorized revisions to the PMB. Any changes to the project must be approved and implemented following the baseline management control process. This control precludes the inadvertent implementation of a budget baseline greater than the project budget. When the performance budget or schedule objectives exceed the project plan and are recognized in the PMB, it is identified as an Over Target Baseline (OTB).

Typical Attribute(s):

- Change Control Logs - Reflects changes to the PMB or CBB
- Control account/work package/planning package plans - Reflects approved budget changes
- Work Authorization Documents - Reflects authorized changes to budget
- Time-phased budget "run" - Reflects authorized changes to the budget
- Management reports (CPRs or other applicable management reports) - Reflects changes to the CBB or additions on formats 1,2, 3, and 5 of the CPR if required

Objective evidence may be found in these typical output(s):

- Change Control Logs (MR, UB, PMB, and CBB)
- Control account/work package/planning package plans
- Master schedules, intermediate schedules (if any), and detailed schedules
- SOW, WBS, WBS Dictionary
- Work Authorization Documents
- Management reports (CPRs or other applicable management reports).

e. Document changes to the Performance Measurement Baseline.

Management Value:

By ensuring that budget and schedule revisions are documented and traceable, the integrity of the PMB is maintained and can be verified. This provides CAMs with valid Control Account Plans against which to execute and measure performance.

Intent: (32)

The PMB should always reflect the most current plan for accomplishing the effort. Authorized changes must be quickly recorded in the system and incorporated into all relevant planning. Planning and authorization documents must be updated accordingly prior to the commencement of new work.

Typical Attribute(s):

- Change Control Logs (MR, UB, PMB, and CBB) - Reflects changes from the original CBB
- Control account/work package/planning package plans - Reflects updated schedule and budget plans for all authorized changes
- Master schedules, intermediate schedules (if any), and detailed schedules - Reflects incorporation of latest authorized changes
- Time-phased budget "run" - Reflects authorized changes to the budget
- SOW, WBS, WBS Dictionary - Review for incorporation of all authorized changes
- Work Authorization Documents - Reflects incorporation of all authorized changes
- Management reports (CPRs or other applicable management reports) - Reflects incorporation of all authorized changes.

Objective evidence may be found in these typical output(s):

- Change Control Logs (MR, UB, PMB, and CBB)
- Control account/work package/planning package plans
- Master schedules, intermediate schedules (if any), and detailed schedules
- SOW, WBS, WBS Dictionary
- Work Authorization Documents
- Management reports (CPRs or other applicable management reports).