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GEIA STANDARD

Earned Value Management Systems

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INFORMATION TECHNOLOGY ASSOCIATION**



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Earned Value Management Systems

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Foreword

The earned value management system guidelines incorporate best business practices to provide strong benefits for program or enterprise planning and control. The processes include integration of program scope, schedule, and cost objectives, establishment of a baseline plan for accomplishment of program objectives, and use of earned value techniques for performance measurement during the execution of a program. The system provides a sound basis for problem identification, corrective actions, and management replanning as may be required.

The guidelines in this document are purposely high level and goal oriented as they are intended to state the qualities and operational considerations of an integrated management system using earned value analysis methods without mandating detailed system characteristics. Different organizations must have the flexibility to establish and apply a management system that suits their management style and business environment. The system must, first and foremost, meet the organization's needs and good business practices.

**A GUIDE FOR ESTABLISHMENT AND
APPLICATION OF AN INTEGRATED
MANAGEMENT SYSTEM WITH COORDINATION
OF WORK SCOPE, SCHEDULE, AND COST
OBJECTIVES AND APPLICATION OF EARNED
VALUE METHODS FOR PROGRAM OR
ENTERPRISE PLANNING AND CONTROL**

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1. INTRODUCTION

An Earned Value Management System (EVMS) for program management will effectively integrate the work scope of a program with the schedule and cost elements for optimum program planning and control. The primary purpose of the system is to support program management. The system is owned by the organization and is governed by the organization's policies and procedures. The principles of an EVMS are:

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

The essence of earned value management is that, at some level of detail appropriate for the degree of technical, schedule, and cost risk or uncertainty associated with the program, a target planned value (i.e., budget) is established for each scheduled element of work. As these elements of work are completed, their target planned values are "earned".

As such, work progress is quantified and the earned value becomes a metric against which to measure both what was spent to perform the work and what was scheduled to have been accomplished.

Schedule variances, which cannot be seen in a stand-alone budget versus actual cost tracking system, are isolated and quantified, and the cost variances are true cost variances that are not distorted by schedule performance. This provides for early identification of performance trends and variances from the management plan, and allows management decision making while there is adequate time to implement effective corrective actions. Without earned value, one can only compare planned expenditures with how much has been spent, which does not provide an objective indication of how much of the planned work was actually accomplished.

For the benefits of earned value to be fully realized, comprehensive planning at the outset, combined with the establishment and disciplined maintenance of a baseline for performance measurement, are required. This combination of comprehensive planning, baseline maintenance, and earned value analysis yields earlier and better visibility into program performance than is provided by non-integrated methods of planning and control. This enhances overall program management value through decisions based on the use of EVMS information.

The intent is to provide management information using the organization's resources and a scaled EVMS application that achieves the program requirements and is compliant with the EVMS principles. EVMS scalability is viewed as spectrum employing the principles of EVMS as fundamental to all programs and the EVMS guidelines ([Section 2](#)) as applicable to large complex and/or high risk programs. This scalability allows any program, regardless of size and complexity, to realize the benefits of earned value management.

Note: In the context of this standard, a program is a group of related projects supporting a mission that are managed in a coordinated way to obtain benefits not obtained from managing them individually. As the management principles are the same to achieve success the two terms, program and project, are used interchangeably in this standard.

Note: In the context of this standard, organization is used as a generic term and may include but is not limited to: public and private corporations and companies; Federal government agencies, departments and activities; state and local government entities; Federally Funded Research and Development Centers (FFRDC) and similar organizations, educational institutions, and non-profit entities that are likely to be owners of earned value management systems.

2 EVMS GUIDELINES

This section provides basic guidelines for organizations to use in establishing and applying an integrated Earned Value Management System (EVMS). These guidelines are expressed in fundamental terms and provide flexibility for each organization to optimize its system and be fully accountable for the effectiveness of its usage. The process discussions in [Section 3](#) provide further information on application of these guidelines. The guidelines are grouped in five major categories as documented below. They are followed by a glossary of common terminology.

2.1 Organization

- a) Define the authorized work elements for the program. A work breakdown structure (WBS), tailored for effective internal management control, is commonly used in this process.
- b) Identify the program 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.
- c) Provide for the integration of the planning, scheduling, budgeting, work authorization and cost accumulation processes with each other, and as appropriate, the program work breakdown structure and the program organizational structure.
- d) Identify the organization or function responsible for controlling overhead (indirect costs).

- e) Provide for integration of the program work breakdown structure and the program organizational structure in a manner that permits cost and schedule performance measurement by elements of either or both structures as needed.

2.2 Planning, Scheduling, and Budgeting

- a) Schedule the authorized work in a manner which describes the sequence of work and identifies significant task interdependencies required to meet the requirements of the program.
- b. Identify physical products, milestones, technical performance goals, or other indicators that will be used to measure progress.
- c) Establish and maintain a time-phased budget baseline, at the control account level, against which program 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. If an over-target baseline is used for performance measurement reporting purposes, prior notification must be provided to the customer.
- 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.
- 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.
- f) Provide that the sum of all work package budgets plus planning package budgets within a control account equals the control account budget.
- g) Identify and control level of effort activity by time-phased budgets established for this purpose. Only that effort which is not measurable or for which measurement is impracticable may be classified as level-of-effort.
- h) Establish overhead budgets for each significant organizational component for expenses that will become indirect costs. Reflect in the program budgets, at the appropriate level, the amounts in overhead pools that are planned to be allocated to the program as indirect costs.
- i) Identify management reserves and undistributed budget.