

AACE
INTERNATIONAL
**RECOMMENDED
PRACTICE**

82R-13

**EARNED VALUE MANAGEMENT
(EVM) OVERVIEW AND
RECOMMENDED PRACTICES
CONSISTENT WITH EIA-748-C**

SAMPLE

AACE
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AAACE® International Recommended Practice No. 82R-13

EARNED VALUE MANAGEMENT (EVM) OVERVIEW AND RECOMMENDED PRACTICES CONSISTENT WITH EIA-748-C

TCM Framework: General Reference

7.1 – Project Scope and Execution Strategy Development

7.2 – Schedule Planning and Development

7.3 – Cost Estimating and Budgeting

7.4 – Resource Planning

7.5 – Risk Management

8 – Project Control Plan Implementation

9.1 – Project Cost Accounting

9.2 – Progress and Performance Measurement

10.1 – Project Performance Assessment

10.2 – Forecasting

10.3 – Change Management

Rev. May 4, 2017

Note: As AAACE International Recommended Practices evolve over time, please refer to www.aacei.org for the latest revisions.

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Disclaimer: The opinions expressed by the authors and contributors to this recommended practice are their own and do not necessarily reflect those of their employers, unless otherwise stated.

(May 4, 2017 Revision)

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INTRODUCTION

This recommended practice (RP) applies to contracts employing the *Electronics Industries Alliance (EIA) - 748 Earned Value Management Systems (EVMS)*^[9] guidelines or the equivalent. It takes precedence over other *TCM Framework* guidance when EIA-748 is required. It provides an overview of the concept of earned value and its application in accordance with the EIA-748-C earned value management system (EVMS) standard. EIA-748-C contains 32 guidelines that are interrelated. This RP provides an overview of the EIA-748-C guidelines 1-32 and provides a comparison with the *Total Cost Management (TCM) Framework*.

RECOMMENDED PRACTICE

Earned Value Unique Terminology

Earned value has some unique definitions and terminology. These are listed in RP 10S-90, *Cost Engineering Terminology*^[7].

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Structure of the Overview RP

This RP will first introduce and define the 32 EIA-748-C guidelines for the use of earned value management. These guidelines are used in total for many contracts, particularly within the US government community, as well as other commercial entities.

The structure of the RP will begin with the *TCM framework*, compare EVMS standards and then follow the general format of the *NDIA (National Defense Industrial Association) Earned Value Management Systems Intent Guide*^[1] into the following categories:

1. EVM within the TCM framework
2. Brief Overview of the EIA-748-C EVMS Standards
3. Introduction to Earned Value Management
4. EIA-748-C Organization: Guidelines 1-5
5. EIA-748-C Planning, Scheduling, and Budgeting: Guidelines 6-15
6. EIA-748-C Accounting: Guidelines 16-21
7. EIA-748-C Analysis and Management Reports: Guidelines 22-27
8. EIA-748-C Revisions and Data Maintenance: Guidelines 28-31

1. EVM WITHIN THE TCM FRAMEWORK

Total Cost Management (TCM) is defined as:^[8]

TOTAL COST MANAGEMENT (TCM) – The effective application of professional and technical expertise to plan and control resources, costs, profitability and risks. Simply stated, it is a systematic approach to managing cost throughout the life cycle of any enterprise, program, facility, project, product, or service. This is accomplished through the application of cost engineering and cost management principles, proven methodologies and the latest technology in support of the management process. It can also be considered the sum of the practices and processes that an enterprise uses to manage the total life cycle cost investment in its portfolio of strategic assets. (1/02)

Figure 1 shows an overview of the TCM process.

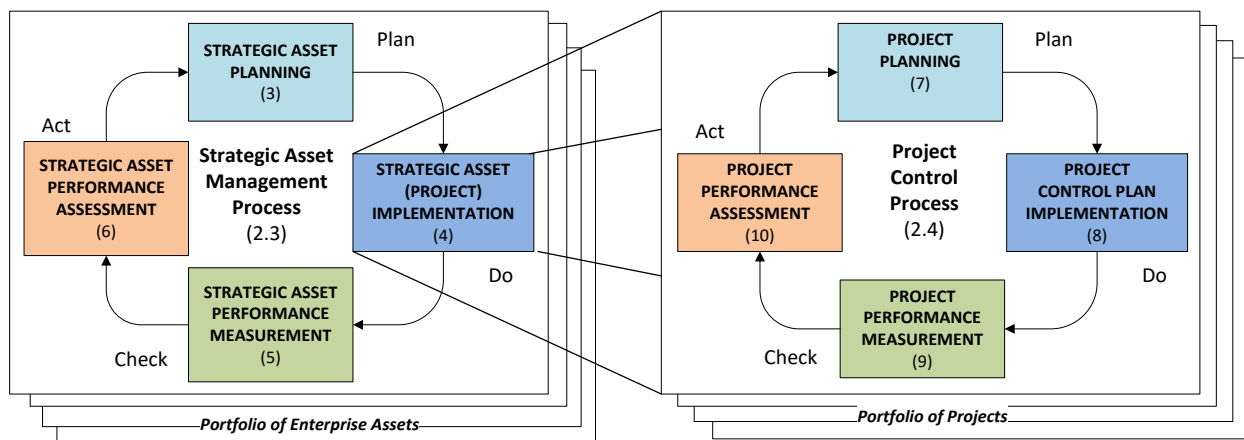


Figure 1 – (TCM Framework Figure 2.2-1) Total Cost Management Process Map

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Earned value is focused on the project portfolio phase. Earned value integrates technical, schedule, and cost budgeting and performance measurement within a project framework, however many of the principles are found within the TCM framework. This RP will describe the earned value basics. The following table provides the framework of TCM as it relates to earned value and highlights areas of the EIA-748-C EVM standard that are not specifically addressed within the TCM framework.

2. BRIEF OVERVIEW OF THE EIA-748-C EVMS STANDARD

The following tables describes the 32 guidelines within the five categories of the EIA-748-C standard showing how they relate to specific section(s) of the TCM Framework.

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EIA-748-C CATEGORY AND GUIDELINE #:				
ORGANIZATION				
#	General Title	General Description	Demonstrated in the following products:	Related to the TCM areas:
1	Define Work Breakdown Structure (WBS). Identify the work elements for the project scope. For this task, a work breakdown structure is often employed.	Define all elements of work for the project. This is typically done using a WBS. <ul style="list-style-type: none"> The WBS is a product oriented description of activities describing the project work scope that allows for work authorization. The WBS breaks down and organizes all work for budgeting, planning, scheduling, cost accounting, work authorization, tracking, measuring progress, management control, and reporting purposes. 	<ul style="list-style-type: none"> WBS WBS dictionary Statement of work (SOW) Traceability matrix from requirements (e.g., SOW, build specifications) to WBS Integrated program management report (IPMR) Base contract and modifications 	7.1 - Project Scope and Execution Strategy Development
2	Identify Organizations. Identify the program organization structure including major subcontractors responsible for accomplishing the work. In addition, define those in the organization who plan and control the work.	Identify and define the organization elements responsible for accomplishing the project work as well as those managing and controlling the work. <ul style="list-style-type: none"> The organization breakdown structure (OBS) helps define the groups within the organization that provides the resources, plan, and budget to perform the work. This includes subcontractor work. 	<ul style="list-style-type: none"> OBS Matrix of OBS and WBS IPMR 	
3	Integrate Subsystems. Integrate planning, scheduling, cost accounting and work authorization activities including (where appropriate) the WBS and OBS.	Integrate the project technical cost and schedule elements through the appropriate project documents. Provide a logical framework for all project cost, schedule, budget, and work authorization activities.	<ul style="list-style-type: none"> WBS and OBS SOW Control account (CA) plans Performance reports Schedules Work authorization documents Responsibility assignment matrix (RAM) Integrated master schedule 	7.1 - Project Scope and Execution Strategy Development 8.1 - Project Control Plan Implementation
4	Identify Overhead Control. Identify the program elements responsible for indirect costs	Define how overhead burdens are distributed across the organization.	<ul style="list-style-type: none"> Cost accounting standards (CAS) disclosure statement Organizational chart Chart of accounts 	9.1 - Project Cost Accounting
5	Integrate WBS and OBS. Integrate the OBS and WBS in a manner that permits the cost and schedule performance.	Allow for the integration of cost and schedule activities through the WBS and OBS in such a fashion that project performance can be accurately measured through either structure as needed. Only a single CA should be at the intersection of the WBS and OBS. The CA identifies all supporting activities. Estimated costs should be apparent.	<ul style="list-style-type: none"> Appropriate IPMRs RAM List of CAs Management reports from cost tool 	8.1 - Project Control Plan Implementation

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EIA-748-C CATEGORY AND GUIDELINE #: PLANNING, SCHEDULING AND BUDGETING				
#	General Title	General Description	Demonstrated in the following products:	Related to the TCM areas:
6	Schedule Work. Schedule the authorized work such that the sequence of tasks and their interdependencies are clearly defined according to the requirements for the project.	<ul style="list-style-type: none"> Schedule all of the activities of the authorized work for the project Identify significant task interdependencies <p>Ensure there is vertical and horizontal integration between the scheduled activities for the work packages, planning work packages and the work breakdown structure (WBS) and organization breakdown structure (OBS).</p>	<ul style="list-style-type: none"> Integrated schedules Control account (CA) plans Work authorization documents (WADs) Risk/opportunity Register 	<p>7.2 - <i>Schedule Planning and Development</i></p> <p>8.1 - <i>Project Control Plan Implementation</i></p>
7	Identify Products/Milestones. Identify products (e.g. milestones, deliverables, etc) that can be used to assess progress.	Maintain the ability to determine technical accomplishment while being able to status progress.	<ul style="list-style-type: none"> Integrated schedules CA plans WADs Control and modifications 	<p>7.2 - <i>Schedule Planning and Development</i></p> <p>7.3 - <i>Cost Estimating and Budgeting</i></p> <p>7.4 - <i>Resource Planning</i></p> <p>8.1 - <i>Project Control Plan Implementation</i></p>
8	Set Time-Phased Budget. Establish and maintain a time-phased project baseline at the CA level.	<p>The assignment of budgets to scheduled sequences of work is the performance measurement baseline (PMB). It should be put into practice soon after the contract is awarded (it should definitely be in place after the authorization to proceed).</p> <ul style="list-style-type: none"> PMB is derived from the contract budget baseline through the allocation of management reserve. Care should be taken to ensure that resources are meted out in a controlled manner. There should not be an inadvertent front-loading of the PMB. Summary level planning packages (SLPPs) may need to be created in order to allow for work that will need to be finalized as the project progresses. Care must be taken to avoid an over target baseline (OTB). Prior notice of an OTB needs to be made to the customer if it is to be used for performance reporting. 	<ul style="list-style-type: none"> CA plans SLPPs WADs Undistributed budget (UB) log Notification of OTB PMB Integrated program management report (IPMR) 	<p>7.2 - <i>Schedule Planning and Development</i></p> <p>7.3 - <i>Cost Estimating and Budgeting</i></p> <p>7.4 - <i>Resource Planning</i></p> <p>8.1 - <i>Project Control Plan Implementation</i></p>