

# EIA STANDARD

---

## Earned Value Management Systems

---

### EIA-748-A

---

JANUARY 2002

---

**ELECTRONIC INDUSTRIES ALLIANCE**

**GOVERNMENT ELECTRONICS AND  
INFORMATION TECHNOLOGY ASSOCIATION**



A SECTOR OF



## NOTICE

EIA Engineering Standards and Publications are designed to serve the public interest through eliminating misunderstandings between manufacturers and purchasers, facilitating interchangeability and improvement of products, and assisting the purchaser in selecting and obtaining with minimum delay the proper product for his particular need. Existence of such Standards and Publications shall not in any respect preclude any member or nonmember of EIA from manufacturing or selling products not conforming to such Standards and Publications, nor shall the existence of such Standards and Publications preclude their voluntary use by those other than EIA members, whether the standard is to be used either domestically or internationally.

Standards and Publications are adopted by EIA in accordance with the American National Standards Institute (ANSI) patent policy. By such action, EIA does not assume any liability to any patent owner, nor does it assume any obligation whatever to parties adopting the Standard or Publication.

This EIA Standard is considered to have International Standardization implication, but the International Electrotechnical Commission activity has not progressed to the point where a valid comparison between the EIA Standard and the IEC document can be made.

This Standard does not purport to address all safety problems associated with its use or all applicable regulatory requirements. It is the responsibility of the user of this Standard to establish appropriate safety and health practices and to determine the applicability of regulatory limitations before its use.

(From Standards Proposal No. 4890, formulated under the cognizance of the Systems Standards & Technology Council (SSTC).)

Published by

©ELECTRONIC INDUSTRIES ALLIANCE  
Engineering Department  
2500 Wilson Boulevard  
Arlington, VA 22201

**PRICE: Please refer to the current  
Catalog of EIA, JEDEC, and TIA STANDARDS and ENGINEERING PUBLICATIONS  
or call Global Engineering Documents, USA and Canada (1-800-854-7179)  
International (303-397-7956)**

All rights reserved  
Printed in U.S.A.

# Earned Value Management Systems

## CONTENTS

---

	Page
<b>Foreword</b> .....	<b>iv</b>
<b>1. INTRODUCTION</b> .....	<b>1</b>
<b>2 EVMS GUIDELINES</b> .....	<b>3</b>
2.1 Organization.....	3
2.2 Planning, Scheduling, and Budgeting .....	3
2.3 Accounting Considerations .....	4
2.4 Analysis and Management Reports .....	5
2.6 Common Terminology .....	6
<b>3 EVMS PROCESS DISCUSSION</b> .....	<b>9</b>
3.1 Statement of Work (SOW).....	9
3.2 Work Breakdown Structure .....	9
3.2.1 WBS Dictionary .....	9
3.3 Program Organization .....	9
3.3.1 Control Accounts.....	10
3.3.2 Control Account Managers.....	10
3.3.3 Subcontract Management .....	10
3.3.4 Inter Company Work Transfers .....	10
3.4 Program Schedule .....	11
3.4.1 Master Schedule .....	11
3.4.2 Supporting Schedules .....	11
3.4.3 Subcontract/Procurement Schedules.....	11
3.5 Budget Allocation and Resource Planning.....	11
3.5.1 Program Budget.....	12
3.5.2 Elements of Control.....	12
3.5.3 Budget Rates .....	12
3.5.4 Management Reserve .....	12
3.5.5 Undistributed Budget.....	13
3.5.6 Work Authorization.....	13
3.5.7 Resource Plan/Time-Phased Budgets .....	13
3.5.8 Planning Packages.....	13
3.5.9 Summary Level Planning Packages.....	14
3.5.10 Work Packages .....	14
3.5.11 Planning Package Conversion .....	14
3.5.12 Performance Measurement Baseline .....	14
3.5.13 Funding Issues.....	15
3.6 Accounting Considerations .....	15
3.6.1 Material Costs .....	15
3.7 Earned Value Methodology.....	15
3.7.1 Discrete Effort .....	15
3.7.2 Apportioned Effort .....	16

3.7.3	Level of Effort .....	16
3.8	<i>Performance Measurement</i> .....	16
3.8.1	Schedule Performance .....	16
3.8.2	Cost Performance .....	17
3.8.3	Apportioned Effort .....	17
3.8.4	LOE Effort.....	17
3.8.5	Price/Usage Analysis (Material).....	17
3.8.6	Performance Analysis/Exception Reports .....	17
3.9	<i>Estimates at Completion</i> .....	18
3.9.1	Frequency .....	18
3.9.2	Content .....	18
3.10	<i>Revisions and Data Maintenance</i> .....	18
3.10.1	Retroactive Changes.....	18
3.10.2	Authorized Changes .....	18
3.10.3	Internal Replanning .....	19
3.10.4	Operating Schedules/Plans .....	19
3.10.5	Over-Target Baseline (OTB).....	19
<b>4</b>	<b>SYSTEM DOCUMENTATION.....</b>	<b>20</b>
<b>5</b>	<b>SYSTEM EVALUATION.....</b>	<b>20</b>
5.1	<i>Evaluation Process</i> .....	20
5.2	<i>Prior C/SCSC Acceptance</i> .....	21
5.3	<i>System Surveillance</i> .....	21

**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 detail system characteristics. Different companies 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 company needs and good business practices.

Appreciation is extended to the team that drafted this standard and to the individuals and professional organizations that supported the initial development efforts. The team that prepared and coordinated the original guidelines was an industry team staffed and chaired by members of the Management Systems Subcommittee of the National Defense Industrial Association. The EVMS work team that drafted the initial guidelines included Bob Pattie (Boeing Aerospace), John Pakiz (McDonnell Douglas), Gary Humphreys (Humphreys and Assoc.), Tom Jennings (Lockheed Martin) Paul Solomon (Northrop Grumman), Gail Saltzman (Rockwell), Harry Sparrow (Performance Management Associates), and Bob Surrency (Lockheed Martin) who chaired the team. This team reported to Art Anderson (Texas Instruments), chairman of the Management Systems Subcommittee. Their efforts were supported by the American Shipbuilding Association, Electronic Industries Association, Performance Management Association, and the Shipbuilders Council of America. Each of these organizations provided valuable inputs and encouragement to the industry team efforts. Notable individual contributors were Tom Shaw (EIA), Frank Losey (SCA). Appreciation is also extended to the representatives of the Department of Defense and Defense Contract Management Command who have supported implementation of these same guidelines in the government sector. Special appreciation is extended to Gary Christle (DoD), Wayne Abba (DoD), and Kevin Kane (DCMC). Others have since become involved, organizations have changed and people have changed positions, but this notice of appreciation recognizes the names and business units who contributed so much to the origination of this standard.

**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**