



Reinforcing the Importance of EVMS

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Agenda

- General Thoughts
- NDIA EVMS EIA-748C Intent Guide Cross Reference Checklist
- Common EVMS Findings
- EVM Implementation Observations
- What's Trending



EVM Implementation – General Thoughts

- Projects are 2.5 times more successful and waste 13 times less money when proven project management practices are used
 - PMI Pulse of the Profession 2016
- Earned Value Management (EVM) has proven itself to be one of the most effective performance measurement and feedback tools for managing projects
 - PMI 2005





EVM Implementation – General Thoughts

- The need remains for a discussion on how the EVMS project controls process integrates with the project delivery process
 - Per DOE O 413.3B Project Delivery requires the implementation of an integrated management system
 - For projects >\$100M the certified management system (EVMS) must integrate the key project components of scope, schedule, budget, resources, and risk
 - Contractors have the flexibility to develop and implement effective management systems tailored to meet their respective needs
 - Any differences in approach for EVMS implementation during the project's life-cycle should be addressed as part of the EVMS Description



EVM Implementation – General Thoughts

- Degree of Acceptance
 - The EVM concept is perceived to be useful across industries
 - When implemented properly, the benefits outweigh the costs
 - There is room for improvement
 - People using EVMS need to better understand its purpose, capabilities, and limitations
 - The expertise of those responsible for implementing EVMS vary considerably



EVM Implementation – General Thoughts

“We are reminded by the work of Dr. W. E. Deming, the father of modern quality management, in which he demonstrated that the vast majority of quality problems are rooted in processes—ignored, flawed, or misunderstood by the worker, not in the workers themselves. Clear process definition, documentation, and accompanying roles and responsibilities are vital to assuring that EVMS works as intended and compliant with ANSI Standard 748.”

- Brodkorb, R. (2011). The truth about preparedness for any EVMS assessment by others. Paper presented at PMI® Global Congress 2011—North America, Dallas, TX.



EVM Implementation – Cross Reference Checklist

- EVMS compliance preparedness includes development of a cross-reference matrix mapping the sections of the EVMS Description to the 32 EIA-748 Guidelines
 - Greatly assists the compliance process and serves to assure that all relevant EIA-748 requirements are addressed through documented processes and artifacts



EVM Implementation – Cross Reference Checklist



National Defense Industrial Association
Integrated Program Management Division

Earned Value Management Systems EIA-748-C Intent Guide Appendix Compliance Map Template

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* See the Intent Guide Change History Log for minor updates made on January 30, 2015
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Table of Contents

- 1 Introduction
- 2 Compliance Map to the EVMS Guidelines
 - 2.1 Organization
 - Guideline 1 – Define Work Scope (WBS)
 - Guideline 2 – Define Project Organization (OBS)
 - Guideline 3 – Integrate Processes
 - Guideline 4 – Identify Overhead Management
 - Guideline 5 – Integrate WBS/OBS to Create Control Account
 - 2.2 Planning, Scheduling, and Budgeting
 - Guideline 6 – Schedule with Network Logic
 - Guideline 7 – Set Measurement Baseline
 - Guideline 8 – Establish Budgets for Authorized Work
 - Guideline 9 – Budget by Control Account
 - Guideline 10 – Create Work Packages, Planning Packages
 - Guideline 11 – Sum Detail Budgets to Control Account
 - Guideline 12 – LOE Planning and Control
 - Guideline 13 – Establish Overhead Budgets
 - Guideline 14 – Identify Management Reserve and Undistributed Budget
 - Guideline 15 – Reconcile to Target Cost Goal
 - 2.3 Accounting Considerations
 - Guideline 16 – Record Direct Costs
 - Guideline 17 – Summarize Direct Costs by WBS Element
 - Guideline 18 – Summarize Direct Costs by OBS Elements
 - Guideline 19 – Record/Allocate Indirect Costs
 - Guideline 20 – Identify Unit and Lot Costs
 - Guideline 21 – Track and Report Material Costs and Quantities
 - 2.4 Analysis and Management Reports
 - Guideline 22 – Calculate Schedule Variance and Cost Variance
 - Guideline 23 – Identify Significant Variances for Analysis
 - Guideline 24 – Analyze Indirect Cost Variances
 - Guideline 25 – Summarize Information for Management
 - Guideline 26 – Implement Corrective Actions
 - Guideline 27 – Revise Estimate at Completion (EAC)
 - 2.5 Revisions and Data Maintenance
 - Guideline 28 – Incorporate Changes in a Timely Manner
 - Guideline 29 – Reconcile Current to Prior Budgets
 - Guideline 30 – Control Retroactive Changes
 - Guideline 31 – Prevent Unauthorized Revisions
 - Guideline 32 – Document PMB Changes

NDIA Intent
Characteristics
and Attributes

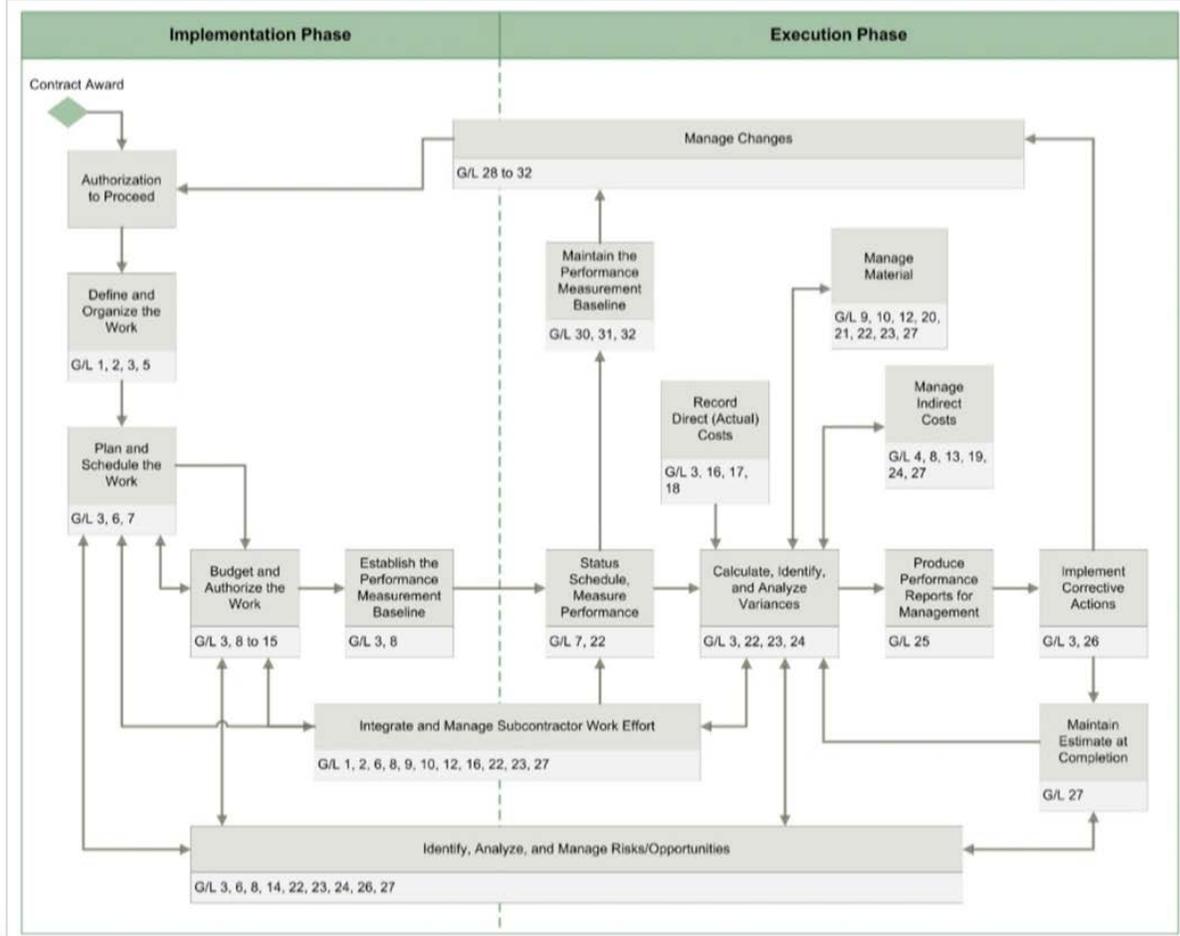


GUIDELINE and QUESTIONS	INTENT		SD REFERENCES
	YES	NO	
ORGANIZATION			
Define the authorized work elements for program. A work breakdown structure (WBS), tailored for effective integration, is commonly used in this process.			
Is a single product-oriented WBS used for a given project extended to the control account level as a minimum?	X		Sect. 2.2.2 WBS Development: 1st Paragraph. "For each CNS project, making each project-specific WBS a deliverable-oriented division of project work, the WBS shall be defined at the project-scope level, as defined in Para 2 last sent. "For authorized scope, the WBS shall be defined at the project-scope level, as WPs must be distinguishable from other WPs."
Do the WBS include all authorized project work and any revisions resulting from authorized changes and modifications?	X		Sect. 2.2.2 WBS Development: 2nd Paragraph. "The WBS shall include all the project scope, including all subcontracts, as defined at the current CD phase." 6th Paragraph. "The WBS Dictionary (WBSD) shall be kept under control with clearly identifiable revision numbers."
Are the following items included in the WBS:			
(1) All WBS elements specified for external reporting?		X	While section 5.5.2 states, "The IPMR is used to report performance information on projects requiring external reporting, the IPMR must reflect the output of the contractor's WBS."
(2) WBS elements to be subcontracted, with identification of subcontractors?		X	While section 2.2.2, WBS Development: 2nd Paragraph states, "The WBS shall contain all the project scope, including all subcontracts, as defined at the current CD phase." 2nd Paragraph. "The WBS shall be defined at the project-scope level, as defined in the Intent Guide requirement that when effort is subcontracted, the WBS shall include the subcontractor's WBS."
Identify the program organizational structure including the major subcontractors responsible for accomplishing the program and the organizational elements in which work will be planned and controlled.			
Are all authorized tasks assigned to organizational elements?	X		Sect. 2.4.2 OBS Development: 1st Paragraph. "The OBS shall reflect the way the project is functionally organized and the assignment of responsibility, accountability, and tasks to be performed." ... "Each project shall have a unique OBS."
Are major subcontractor and/or inter-organizational elements identified in the WBS?			While section 2.4.2 OBS Development: 1st Paragraph states, "The OBS shall reflect the way the project is functionally organized and the assignment of responsibility, accountability, and tasks to be performed." ... "Each project shall have a unique OBS."



EVM Implementation – Common EVMS Findings

- CAM ownership, inattention to EVMS responsibilities
- Lack of integrated processes and management systems
- Lack of cost and schedule integration
- Work authorization policies and procedures not followed
- Lack of vertical and horizontal schedule traceability (logic network critical path)
- EV techniques not reflecting actual accomplishment
- Lack of alignment between the time-phased plan (WS) and resource allocation
- Zero budget work packages and



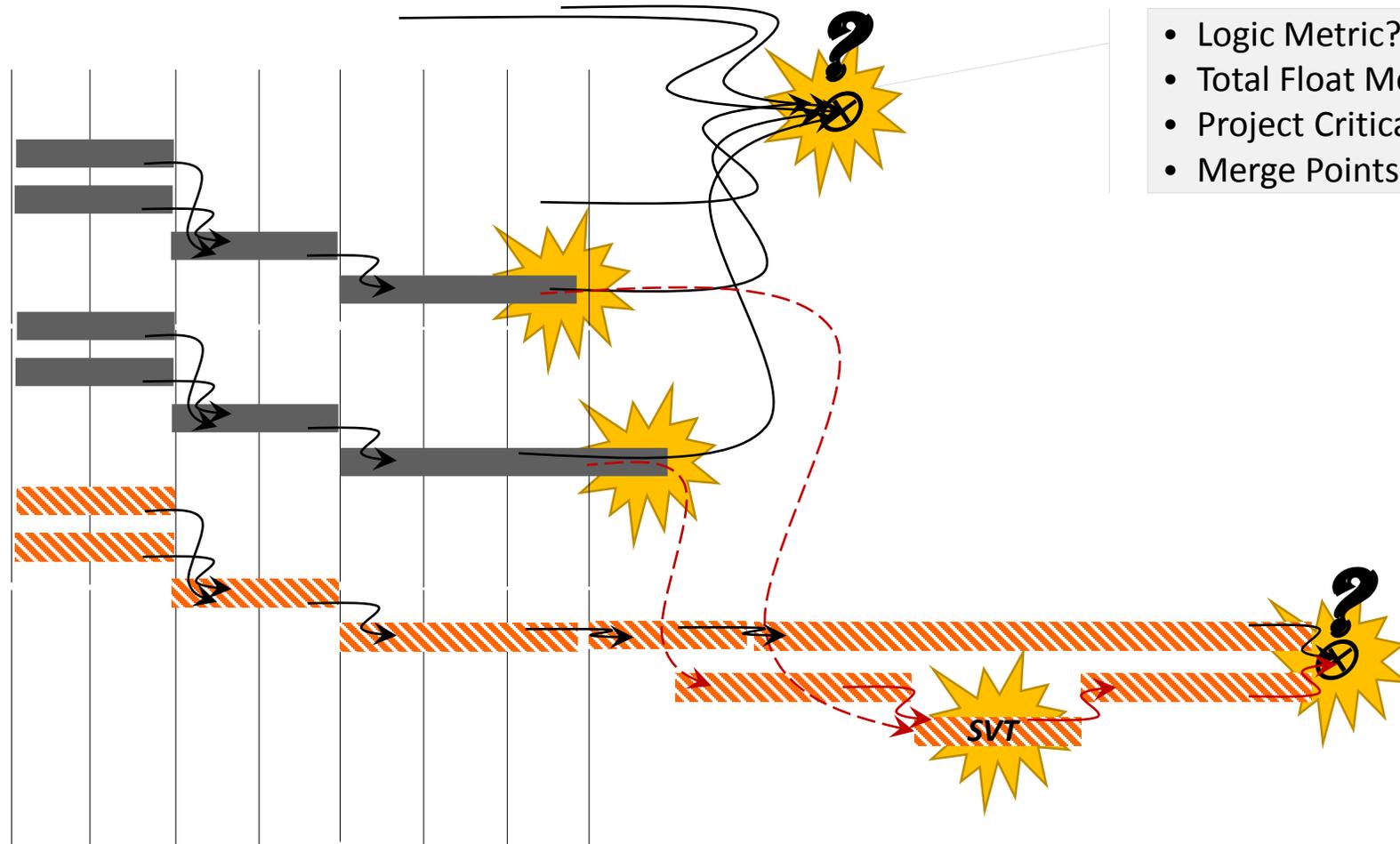
- Budget/data reconciliation issues
- Baseline fluctuations and frequent replanning
- Current period and retroactive changes
- Improper use of Management Reserve (MR)
- Untimely, unrealistic Estimates at Completion
- Material performance and accounting misalignment
- Lack of predictive variance analysis (impact and time)

Source: NDIA Earned Value Management System Guideline Scalability Guide November 2016



EVM Implementation Observation

Illustrative Example for Lack of Horizontal Schedule Traceability



- Logic Metric?
- Total Float Metric?
- Project Critical Path?
- Merge Points Metric?



EVM Implementation Observation

- The importance of controls in the project management effort
 - Project controls is a project management function responsible for the implementation of the management system
 - Project controls coordinates with the project manager and control account managers to develop and maintain the project's performance measurement baseline
 - Project controls generate the project's cost and schedule information while the project manager and control account managers consume the information generated to support informed decision-making for the project
 - Project controls is the first line of defense for the effective implementation of the management system



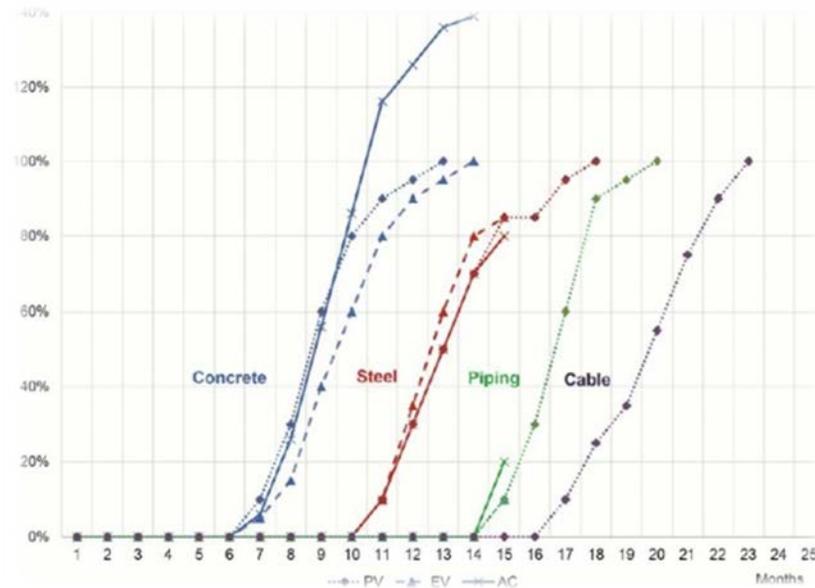
EVM Implementation Observation

- Correlation is needed between the time-phased plan (BCWS), the earned value methods selected, and the allocation of resources and costs
 - The time-phased budget must be consistent with the actual way work will be executed and measured to allow for an accurate portrayal of performance



EVM Implementation Observation

- EVM Methods for measuring construction work progress sometimes missing from the EVMSD:
 - Units Completed
 - Cable/Wire Pulling
 - Concrete Placed
 - Asphalt Paved
 - Excavated Soil
 - Weighted or Equivalent Units
 - Structural Steel Erection





What's Trending

- Future EIA-748 EVMS Standard Update
- NDIA Intent Guide Rewrite
 - Opportunity to influence the application of EIA-748 EVMS compliance towards the uniqueness of design and construction efforts
- PM-1 EVMS Certification is contractor and site specific
- PM-1 Certified EVMS Description Revision Approvals
- Next Round of RSAV Anticipated in late Spring or early Summer
- Development of the Planning and Scheduling Amplification Guide
- Work towards Automating the EVMS Compliance process continues – for those that want to participate
- EVMS Memorandum of Agreement (MOA)



Questions?

PM Office of **Project Management**

