NDIA Systems & Mission Engineering Conference, Tampa, FL, Oct. 21, 2019

Tutorial: Integrate SE with Earned Value Management and Program Management, Contractually and Practically

Paul Solomon

Intro:

In 2009, DoD committed to integrate SE with Earned Value Management. The Program Management Improvement and Accountability Act of 2015 was passed to improve government-wide program and project management skills by establishing government-wide standards and policies. One stone can kill both birds.

Abstract:

The role of SE in the PM process has increased and will strengthen because of two acquisition reform laws. In a report to Congress, required by the Weapon Systems Acquisition Reform Act of 2009 (WSARA), DoD committed to integrate SE with Earned Value Management (EVM) and to improve the effectiveness of EVM as a PM tool. This has not happened. This tutorial will provide a path for today's PMs to meet the objectives of the Program Management Improvement and Accountability Act of 2015 (PMIAA) and achieve better program outcomes. Training examples are provided to show how PMs can require contractors to integrate SE with EVM, link EV to technical performance measures (TPM), and increase focus on the product scope instead of the work scope. Recommended contract terms to make it happen will be discussed.

WSARA

WSARA elevated the role of SE within DoD and required DoD to submit a report to Congress with recommendations for improving the effectiveness of EVM and its implementation.

The WSARA Report, submitted in 2009, stated that:

1. The utility of EVM has declined to a level where it does not serve its intended purpose.
2. EVM can be an effective program management tool only if the EVM processes are augmented with a rigorous SE process and SE products are costed and included in EVM tracking.
3. If the SE life-cycle management method is integrated with the planning of the Performance Management Baseline (PMB), then EVM will accurately measure technical performance and progress.
4. SE and EVM should be integrated, not stove-piped.
5. Vendors provide inaccurate EVM status, keep EVM metrics favorable and problems hidden.
6. The Program Manager should ensure that the EVM process measures the quality and technical maturity of technical work products instead of just the quantity of work performed.

Since 2009, DoD has issued "internal guidance and policy" to address the findings and recommendations of the WSARA Report but contractors' practices have not improved. Contractual requirements, not guidance, are needed to fix EVM.

PMIAA

PMIAA requires the Office of Management and Budget (OMB) to adopt and oversee implementation of *government-wide* standards, policies, and guidelines for program and project management for executive agencies. These standards must be consistent with **widely accepted standards for program and project management** planning and delivery. OMB has defined four technical competencies which are absent from EIA-748: Quality Management, Requirements Management, Risk Management, and Scope Management.

PMBOK® Guide

In the tutorial, you will learn why the only standard that meets the criteria is the *Project Management Institute* (PMI) *Guide to the Project Management Body of Knowledge* (PMBOK® Guide). A PM's needs that are covered by the PMBOK® Guide but are not mentioned in EIA-748 include the technical or product baseline, requirements management and traceability, risk management, and project procurement management.

The tutorial includes tables that relate PMBOK® Guide content to similar content in SE standards and guides such as ANSI/EIA-632, ISO/IEC 26702:2007/IEEE 1220), CMMI®, Defense Acquisition Guidebook, and SE Leading Indicators Guide, Version 2.0.

PMIAA Applicability to DoD?

PMIAA gave a potential waiver to DoD by stating it is not applicable to DoD "to the extent that the provisions…are substantially similar to or duplicative of…policy, guidance, or instruction of the Department related to program management.'' You will learn that current DoD guidance and instructions regarding EVM are *not* similar to or duplicative of PMBOK® Guide*.*

Integrating SE and TPMs with EVM

A PM does not have to wait for transition to PMBOK® Guide to require contractors to link EVM to SE work products and TPMs. You will learn techniques to ensure that the accomplishment criteria for the key technical reviews are traceable from the technical baselines to the Integrated Master Plan (IMP) to the schedule to the work packages. Consequently, EV can be based on objective progress towards: 1. Developing and validating the requirements, including trade studies. 2. Defining and allocating key TPMs. 3. Achieving TPM planned values and planned functionality.

The following topics will also be illustrated with best practices, examples, and useful templates: using the IMP to communicate required technical accomplishment criteria, using the Integrated Baseline Review to ensure that the Contractor has integrated SE work products and technical performance into the IMS and work packages, verifying that work package interim progress and completion are traceable to the status of requirements in the requirements data base, discretely planning and measuring rework, and accounting for deferred functionality.

The Request for Proposal should be the first step in requiring contractors to integrate SE and TPM with EVM. PMs will then have the skills, tools and information to meet PMIAA objectives.

An earlier version of this tutorial was presented in 2018. A PDF file of that tutorial is available at my web site, www.pb-ev.com at the "Articles and Tutorial" tab.

Abstract #22434