DoD Agile Meeting
DoD Agile Roadmap: Concept and Purpose

September 23, 2015

Under Secretary of Defense for Acquisition, Technology, and Logistics
Goal: To identify meaningful steps, actions, best practices, etc., to enhance acquisition outcomes for those adopting agile methods and to help foster agile adoption in DoD given trends, lessons learned, etc.

- Could be a simple: Identify “As Is” and “To Be” with gaps, and prioritized actions (aka backlog)
- Could be adaptive: Functional subgroup working with others (perhaps across other Agencies) to build a network of shared experiences, SME relationships, sub-group meetings to achieve a good fit within that functional community environment.
- Could be actions beyond DoD boundaries: Partnership via trade-groups to build upon larger Federal Government expertise, commercial trends, etc.
GAO Report Suggests 10 Best Practices for Government

• Start with Agile guidance and an Agile adoption strategy
• Enhance migration to Agile concepts using Agile terms
• Continuously improve Agile adoption at both the project level and organization level
• Seek to identify and address impediments at the organization and project levels
• Obtain stakeholder/customer feedback frequently
• Empower small, cross-functional teams
• Include requirements related to security and progress monitoring in your queue of unfinished work (the backlog)
• Gain trust by demonstrating value at the end of each iteration
• Track progress using tools and metrics
• Track progress daily and visibly
# GAO’s 14 Challenges

| Teams had difficulty collaborating closely. | Procurement practices may not support Agile projects. |
| Teams had difficulty transitioning to self-directed work. | Customers did not trust iterative solutions. |
| Staff had difficulty committing to more timely and frequent input. | Teams had difficulty managing iterative requirements. |
| Agencies had trouble committing staff. | Compliance reviews were difficult to execute within an iteration time frame. |
| Timely adoption of new tools was difficult. | Federal reporting practices do not align with Agile. |
| Technical environments were difficult to establish and maintain. | Traditional artifact reviews do not align with Agile. |
| Agile guidance was not clear. | Traditional status tracking does not align with Agile. |
Ideas for Cost:

1. Learn from NSA/IC Cost Team
2. Carnegie Mellon’s QUELCE (Quantifying Uncertainty in Early Cost Estimation) method
Contractor EV system processes need to be codified to incorporate agile implementation.

Common agile framework needs to be developed for consistent oversight within the DOD construct across all functions.

Agile / EVMS working group has made significant progress establishing a common understanding of the goals of agile management in the construct of regulatory requirements.

Further effort is needed especially in progress measurement and baseline configuration control.
Background

There are differences in managerial approach and lifecycle development in the application of Earned Value (EV) and Agile software development; driving changes to:

- Data Dictionary
- WBS/IMS
- Change Management
- Data Analysis
- Acquisition Management (NEW)
Ongoing Community Activities

• **GAO Cost, Schedule and EVM Expert Meeting**
  - September 29 from 2:00 to 4:00 at GAO Headquarters, Staats Briefing Room (7th Floor)
  - Agenda Item #1: Discuss the applicability of EVM reporting for Agile programs.
    - What, if any, value is added by imposing this type of reporting?
    - Are Agile and EVM in conflict with one another? and the topics the agile and EVM and are they compatible

• **CPM Integrated Program Management Workshop (IPMW)**
  - November 16 to 18, 2016 in Bethesda, MD
  - Practice Symposia Track: Agile Integration

• **CPM’s Measureable News (MN) next issue (October 2015) will have several agile related articles**

• **PARCA DoD White Paper – ongoing interaction**

• **NDIA Agile Committee is not going away. Looking for inputs on what’s next**

• **CPM WDC has held many meetings on the subject and plans to hold future meetings. Plus more CPM Chapters are starting and consider Agile the hot topic**
What do we mean by Agile?
Agile is an umbrella term for \textit{lightweight} methods and practices such as Scrum, XP, Kanban and Lean

Now becoming the dominant methodology for software development and beyond

\textit{agile} (adjective)

1. \textit{nimble}: able to move quickly and with suppleness, skill, and control
2. \textit{mentally quick}: able to think quickly and intelligently
Agile Overview

Agile Manifesto
We are uncovering better ways of developing software by doing it and helping others do it. Through this work we have come to value:

- **Individuals & Interactions** Over **Processes & Tools**
- **Working Software** Over **Comprehensive Documentation**
- **Customer Collaboration** Over **Contract Negotiation**
- **Responding to Change** Over **Following a Plan**
Development Model

Step Development with Mission Infrastructure As The Base

Demonstrated Operational Value Constantly Increases with each Spin

Mission Apps
Mission Infrastructure
IT Infrastructure

Initial Demonstrated Operational Value

Robust Operational Value

Operational Value

Spin 0
Spin 1
Spin 2
Spin n
Agile Delivery Model

(1) Validate/Reprioritize scope
At the start of each iteration, the team works to validate planned iteration scope and if needed reprioritize or swap scope.

(2) Build iteration plan
The team works to gain a deeper understanding of the iteration requirements and be able to break the work down allocated to their track. Each track uses this to create an iteration plan.

(3) Daily team meeting
The team meets daily to report status and address roadblocks.

(4) Deliver potentially deployable functionality

Iteration Scope

Iteration Plan

Potentially Deployable Functionality

24 hours

4 weeks
A product oriented WBS organized around Agile products is totally compatible with MIL-STD 881.
Agile Principles

Our highest priority is to satisfy the customer through early and continuous delivery of valuable software.

Welcome changing requirements even late in development, Agile processes harness change for competitive Advantage.

Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale.

Business people and developers must work together daily throughout the project.

Build projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done.

The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.
Working software is the primary measure of progress.

Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely.

Simplicity—the art of maximizing the amount of work not done is essential.

The best architectures, requirements, and designs emerge from self-organizing teams.

Continuous attention to technical excellence and good design enhances agility.

At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly.
Agile vs. Waterfall

**Water Fall**

- System Architecture And Requirements
- Software Architecture/Design
- Software Code/Test
- System Integration/Test

**Agile (Scrum)**

- Architecture, Fundamental Requirements, and Design

**Sprints**

**Rapid/Early Cycles of Development with Feedback**
Accelerated Delivery and Risk Reduction

When 50% “done”, under which scenario would you be more confident?