



# Agile-Lean Systems Engineering in Defense: Expanding the Scope of NDIA/AFEI Agile Defense Adoption Proponents Team (ADAPT)

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# Agenda

- What is ADAPT?
- System Engineering's Role in Agile Adoption
- ADAPT's Role in Systems Engineering
- Upcoming Events

# WHAT IS ADAPT?





## What is ADAPT?

- Community of Interest focused on adoption of agile methods in DoD
- SME's with similar interests
  - Government organizations looking to change
  - Industry practitioners (consultants, tool vendors, contractors, etc)
  - Academia investigating adoption of agile
- Minimal organization
- Active
- AGILE!



## Background

- Established in February 2011
- Focus: adoption of agile methods in IT and **software and systems engineering**, acquisition, legislation, requirements and technology.
- The ADAPT Executive Committee:
  - Richard Cheng, Excella Consulting
  - Suzette Johnson, Northrop Grumman
  - Ken Mills, Version One
  - Richard Turner, Stevens Institute
- AFEI Staff
  - Dave Chesebrough, AFEI
  - Tammy Kicker, AFEI



## Recent Activities

- “The Business Case for Agile Methods” Paper (2011)
- Input to “Handbook for Implementing Agile in Department of Defense Information Technology Acquisition” (2012)
- Conferences and Workshops (2011, 2012)
- Open (Breakfast) Meetings (~every two months)
- Collaborations/Networking/Listening



# **SYSTEM ENGINEERING ROLE IN AGILE ADOPTION**



## First there was IT...

- First years focused primarily on software in the IT environment and development practices
- Home ground for agile practices
- Support from DoD CIO office
- Leveraging Past Section 804 work





## Reality re-emerges

- “No agile team is an island” (*Apologies to John Donne*)
- Most acquisition is system driven, system focused
- Systems engineering exists in many forms
- Contracting is a key issue in enabling agile
- Culture change is required –and not just in development



# Agile and Systems Engineering

- Integrating SwE and SE has always been “difficult”
- SE touches SW in many places
  - Requirements
  - Architecture
  - V&V
- Easier with more traditional SW development practices based on SE principles
- Agile has different values
- There must be education on both sides
- Some progress being made



## SE Role in Agile adoption

- SE needs to understand how to enable rather than dismiss agility
- SW needs to see SE as an enabler adding value
- Some agile approaches seem less challenging to SE – starting points?
- SE needs to apply more “systems thinking” to its own processes
- SE and SW need to learn from each other



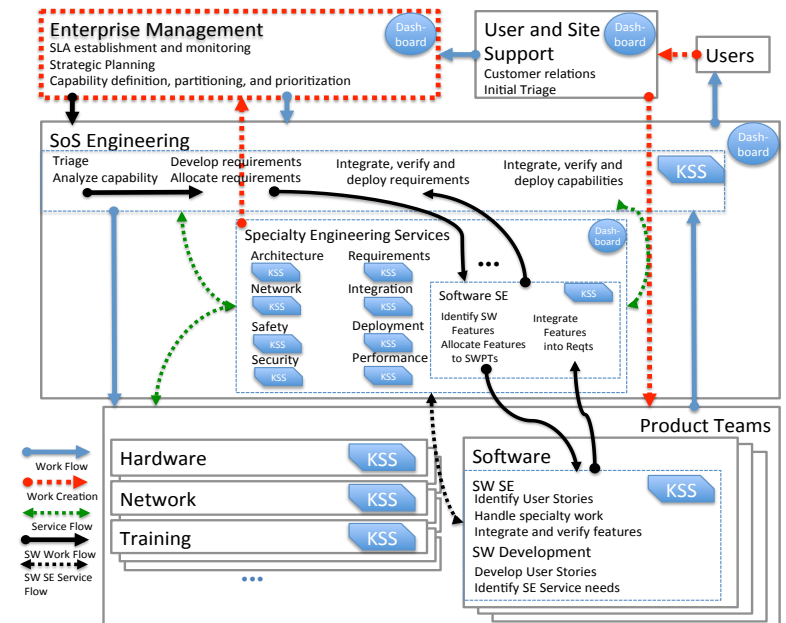
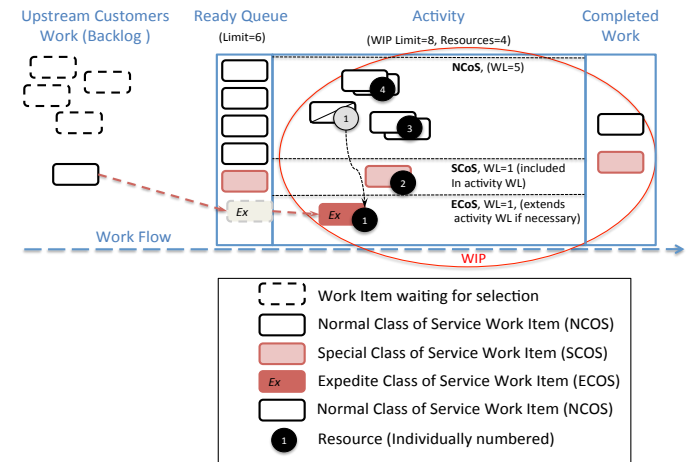
# ADAPT'S ROLE IN SYSTEMS ENGINEERING



## Community

- ADAPT can span the three target communities to bring together beneficial attractors in agile (and lean) adoption in a systems context
  - Government and Military: SEI, DoD, DISA, DARPA, NSF, other agencies
  - Industry: NDIA/AFEI, PMI, Lean Systems Society, Agile Alliance, OMG, other agile and lean organizations
  - Academia: SERC@Stevens (23 universities), others
  - Companies and individuals

- Agile and Lean Systems Engineering: Kanban in SE
  - SERC Research Task
  - Investigating pull scheduling and SE as a service
  - Building a simulated implementation of networked kanban-based scheduling systems for a complex, multiple site hospital information system
  
- Collaboration among strong SMEs
  - Industry working group (volunteers)





## Connections in RT-35

- David Anderson (David J. Anderson and Associates) ■
- Jabe Bloom (The Library Corporation) ■
- Mike Burrows (David J. Anderson and Associates) ■
- Hillel Glazer (Entinex) ■
- *Curtis Hibbs (Boeing)* ■◆
- *Suzette Johnson (Northrop Grumman)* +◆
- Larry Maccherone (*Rally Development*) ■
- Don Reinertsen (Reinertsen & Associates) ■
- *David Rico (Boeing)* ◆+
- Garry Roedler (Lockheed Martin) ◆
- Karl Scotland (Rally Software, UK) ■
- *Alan Shalloway (NetObjectives)* ■
- Neil Shirk (Lockheed Martin) ◆
- Neil Siegel (Northrop Grumman) ◆
- James Sutton (Jubata Group) ■
- *Richard Turner (Stevens/SERC)* ■◆+

*ADAPT*

■ LSS

◆ NDIA

+ PMI



## Other ADAPT-related activities

- Clearing house for related research, experience, practice (may use DAU Acquisition BPCH)
- Developing culture change model based on corporate experience (Boeing, LM, NGC, Raytheon)
- Developing common educational outcomes and training resource database





# Fall ADAPT Workshop

- November 28, 2012 - Hyatt Regency Crystal City
- World Cafe-style workshop w/tables:
  - Contracting and Acquisition
  - Project Management
  - Testing and Integration
  - Systems Considerations
  - Changing Culture
- Speakers from DoD:
  - Ronald Pontius, Director, C2, Under Secretary of Defense, AT&L
  - Dr. Steven Hutchison, Principal Deputy, DASD Developmental Test and Evaluation
  - Dave Mihelcic, Chief Technology Officer, DISA (invited)
  - More information [www.afei.org/workinggroups/Adapt](http://www.afei.org/workinggroups/Adapt)

The poster features the AFEI logo at the top left and the text "REGISTER TODAY: WWW.AFEI.ORG/EVENTS/CA01" at the top right. The main title is "AGILE IN DEFENSE" in large blue letters, with the subtitle "ATTACKING THE IMPEDIMENTS" in red below it. In the center is a photograph of a martial artist in a black gi performing a high kick. To the right of the image is a vertical list of topics: WATERFALL, CONTRACTING, CULTURE, MANAGEMENT, DOCUMENTATION, TESTING, INTEGRATION, CERTIFICATION, ACCREDITATION, and SCALABILITY. At the bottom left is the NDIA logo, and at the bottom right is the text "A WORKSHOP PRESENTED BY ADAPT NOVEMBER 28, 2012 HYATT REGENCY CRYSTAL CITY • ARLINGTON, VA" and "EVENT #3A01".

- Questions?
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