CMMI for Acquisition: Introducing the Acquisition Constellation

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Ms. Kristen Baldwin
OUSD(AT&L)/Systems and Software Engineering
Interest in Acquisition Process Improvement

- Congress directed the Department to establish software acquisition process improvement
- OSD led the development of the CMMI-Acquisition Module (CMMI-AM)
- Services and Agencies tailoring CMMI and CMMI-AM for use in acquisition activities
- General Motors and the SEI publish *Adapting CMMI for Acquisition Organizations: A Preliminary Report*
- CMMI Steering Group with DoD Sponsorship, established the CMMI-Acquisition project

“How do I measure PEO capability; credentials?”
LTG Yakovac, 14 Nov 05, CMMI Technology Conference Keynote
New CMMI Architecture

Concept of Constellations

• Constellation: “A collection of components that are used to construct models, training materials and appraisal materials in an area of interest”
  – Development Constellation
  – Acquisition Constellation
  – Services Constellation

• Each constellation adds “additions” to the CMMI Foundation Model, which includes core components

• The model for the Acquisition Constellation will be called CMMI for Acquisition, CMMI-ACQ
CMMI-ACQ
Development Strategy

• General Motors and the SEI developed the initial CMMI-ACQ model
  – Considered CMMI Acquisition Module (CMMI-AM) in its development
  – Involved industry and government agencies in developing and reviewing the initial draft model

• Additional requirements solicited by piloting
  – Assures Service/Agency/Industry acquirer needs are addressed
  – Enhances acquiring organization understanding of process improvement

• CMMI-ACQ Model Team will propose improvements to the initial model based upon findings from the pilots

• CMMI-ACQ Advisory Board will vet changes
  – Key reviewers identified for stakeholder review

• Steering Group will endorse final update
CMMI-ACQ Operational Concept

**CMMI-SG**

- Advisory Board
  - OUSD (AT&L)
  - Services (3)
  - MDA
  - DCMA
  - GAO
  - GM
  - NDIA

*The initial CMMI-ACQ model Requirements and Design was developed with CMMI-AM, and the GM ACQ project, using the CMMI v1.2 model as the core*

**Initial CMMI-ACQ**

- v.1
- v.9
- v.1.2

  (Requirements/Design*)
  (Pilot/Review/Revise, Making changes to be consistent with 1.2)
  (Pilot/Revise)

**Stakeholder Community**

**Model Team**

- CMMI Architect
- SEI
- Acquisition Experts (Services, DAU, Industry)
Initial CMMI-ACQ

- GM/SEI Joint Project Goal: Develop an Acquisition Model that conforms with the CMMI architecture
  - Based on the CMMI Model Foundation
    - 16 process areas that cover project management, organizational and support process areas; the generic goals and practices; and glossary
  - Source models included
    - CMMI Acquisition Module (CMMI-AM)
    - Software Acquisition Capability Maturity Model (SA-CMM).
    - Incorporates attempts by several acquisition organizations to adapt the CMMI for Development (CMMI-DEV) for an acquisition organization

- Best practices contained in the initial draft CMMI-ACQ went through an extensive review process
  - More than 1,000 comments and change requests from acquisition organizations as well as suppliers
  - Over 60 reviewers from 24 industry and government organizations
Initial CMMI-ACQ Acquisition Process Area Additions

- Solicitation & Supplier Agreement Development
- Acquisition Management
- Acquisition Technical Solution
- Acquisition Verification
- Acquisition Requirements Development
- Acquisition Validation
- Core Foundation Model
- Process Management
- Project Management Support
Specific Goals in CMMI-ACQ PA Additions

• Acquisition Requirements Development
  – Develop Customer Requirements
  – Develop Contractual Requirements
  – Analyze and Validate Requirements

• Acquisition Verification
  – Prepare for Verification
  – Verify Selected Work Products

• Solicitation and Supplier Agreement Development
  – Prepare for Solicitation and Supplier Agreement Development
  – Select Suppliers
  – Establish Supplier Agreement

Acquisition PAs cover the activities related to the acquisition of products and services from suppliers
Specific Goals in CMMI-ACQ PA Additions, continued

- Acquisition Management
  - Manage Supplier Agreements
  - Satisfy Supplier Agreements
- Acquisition Technical Solution
  - Develop Technical Constraints
  - Analyze and Verify Technical Solution
- Acquisition Validation
  - Prepare for Validation
  - Validate Products or Services

Acquisition PAs cover the activities related to the acquisition of products and services from suppliers.
CMMI-ACQ Pilots

• CMMI planned/proposed pilot efforts for FY07
  – Australian DMO (complete)
  – General Motors and Hewlett Packard (in progress)
  – Army – Picatinny Arsenal (complete)
  – USAF – Space & Missile Center; Electronic Systems Command
  – DHS – “US Visit” Program
  – NAVAIR – (tbd)
  – Missile Defense Agency (tbd)
  – HUD – (tbd)

• UK MoD interest being explored
• GAO and others are piloting as opportunities arise
Pilot Details

• GAO Review/Agency input
  – 38 CRs already submitted
• SCAMPI-B with GM and Hewlett Packard
  – Conducted at GM site, 2-6 October, to identify strengths, weaknesses, and needed improvements
  – Generated 19 CRs, some overall issues and some specific technical issues with the special report
  – SCAMPI-C conducted at HP site, 6-10 November
• Australia Defense Material Organization
  – Proposed reorganization for the model
• Army, Picatinny
  – Review conducted with engineering group that provides acquisition support to Program Offices
  – Generated several CRs
CMMI-ACQ Governance: Advisory Board

• Includes representatives from major acquisition community stakeholders
  – DoD (OUSD (AT&L) and Services)
  – Other Government Agencies (GAO, DCMA)
  – Commercial and Defense Industry
• Ensures CMMI-ACQ considers stakeholder needs
• Coordinates with CMMI Steering Group to ensure consistency among constellations
• Reviews pilot results and categories of change requests to set the criteria for changes to the initial draft CMMI-ACQ
• Reviews and comments on products from the CMMI-ACQ model team
CMMI-ACQ Development: Model and Training Teams

• Model Team
  – Makes changes to the GM/SEI initial draft CMMI-ACQ baseline according to criteria defined by the Advisory Board
  – Dispositions CRs generated from the pilots against the baseline and approved by the Advisory Board
  – Raises overarching issues to the Advisory Board
  – Submits model to the Advisory Board for review

• Training Team
  – Develops CMMI-ACQ-specific training material from model
  – Submits training material to the Advisory Board for review
## Schedule

<table>
<thead>
<tr>
<th>Date Range</th>
<th>Activity</th>
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<tbody>
<tr>
<td>Sep - Nov 2006</td>
<td>Conduct pilots with initial draft CMMI-ACQ baseline</td>
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<tr>
<td>Dec 2006 - Feb 2007</td>
<td>Update baseline based upon pilot findings and submitted change requests</td>
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<tr>
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<td>Develop training</td>
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<tr>
<td>March 2007</td>
<td>CMMI-ACQ available for stakeholder review</td>
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<tr>
<td>April 2007</td>
<td>CMMI-ACQ available for QA</td>
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<tr>
<td>April 30, 2007</td>
<td>Release CMMI-ACQ Product Suite <em>(Model, Method, Training)</em></td>
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Summary

• An integrated approach to developing acquisition process improvement
  – Industry involvement
  – Government-wide needs
  – Builds on existing process improvement efforts
• Advisory Board and pilots will shape the final outcome
• This is an opportunity to transform acquirer and supplier relationships and shape the future of process improvement
• For more information contact Karen Richter, IDA, krichter@ida.org, or Mike Phillips, dmp@sei.cmu.edu
• For a copy of the GM/SEI Special Report go to http://www.sei.cmu.edu/publications/documents/06.reports/06sr005.html