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

- <u>Congress</u> directed the Department to establish software acquisition process improvement

- <u>OSD</u> led the development of the CMMI-Acquisition Module (CMMI-AM)

- <u>Services and Agencies</u> tailoring CMMI and CMMI-AM for use in acquisition activities

- <u>General Motors</u> and the SEI publish *Adapting CMMI for Acquisition Organizations: A Preliminary Report*

- <u>CMMI Steering Group</u> 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
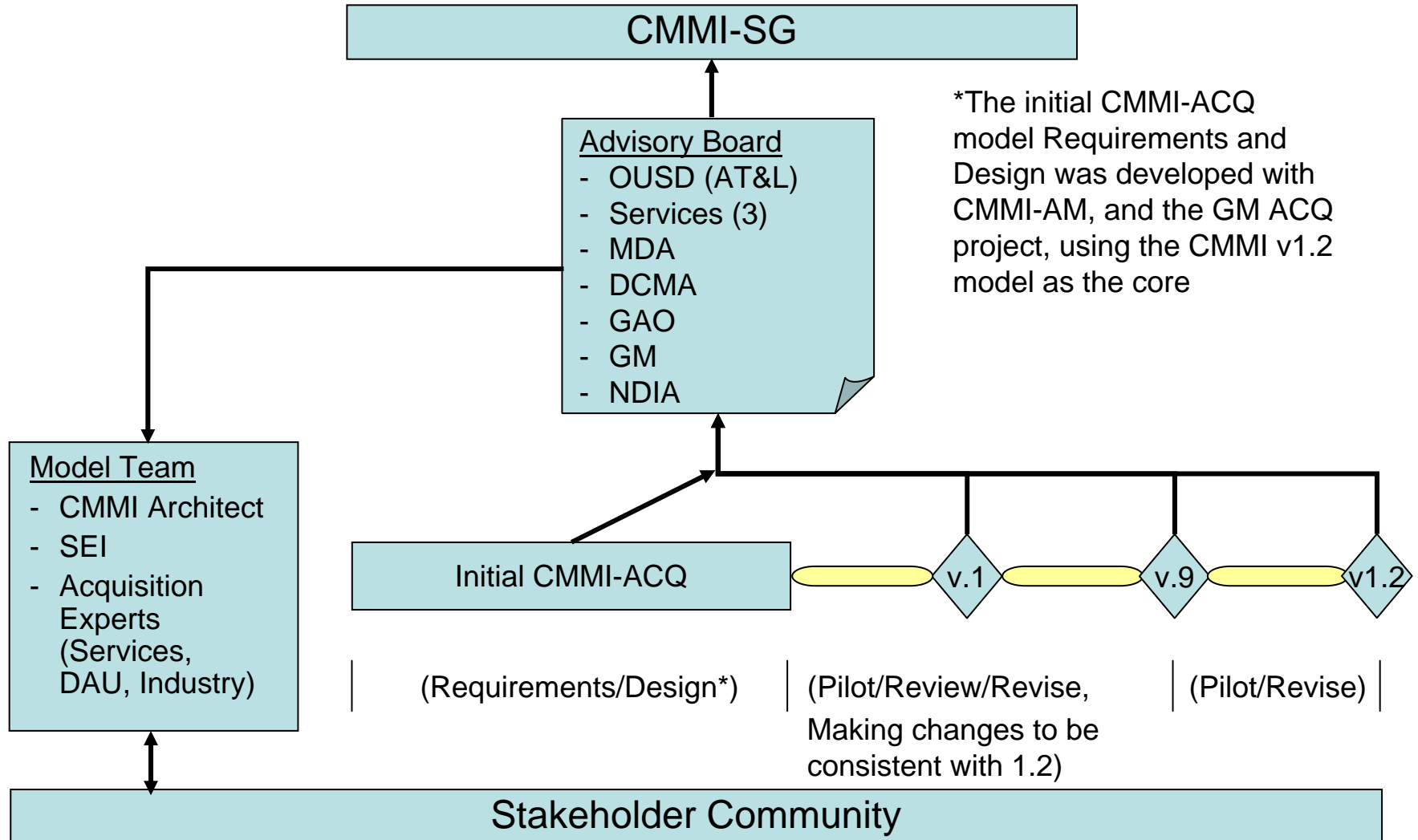
CMMI-ACQ
Development Strategy

- 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
  - Special report at http://www.sei.cmu.edu/cmmi/models/initial-cmmi-acq-release.html
- 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

Model Team
- CMMI Architect
- SEI
- Acquisition Experts (Services, DAU, Industry)

Initial CMMI-ACQ

v.1   v.9   v1.2

(Requirements/Design*)

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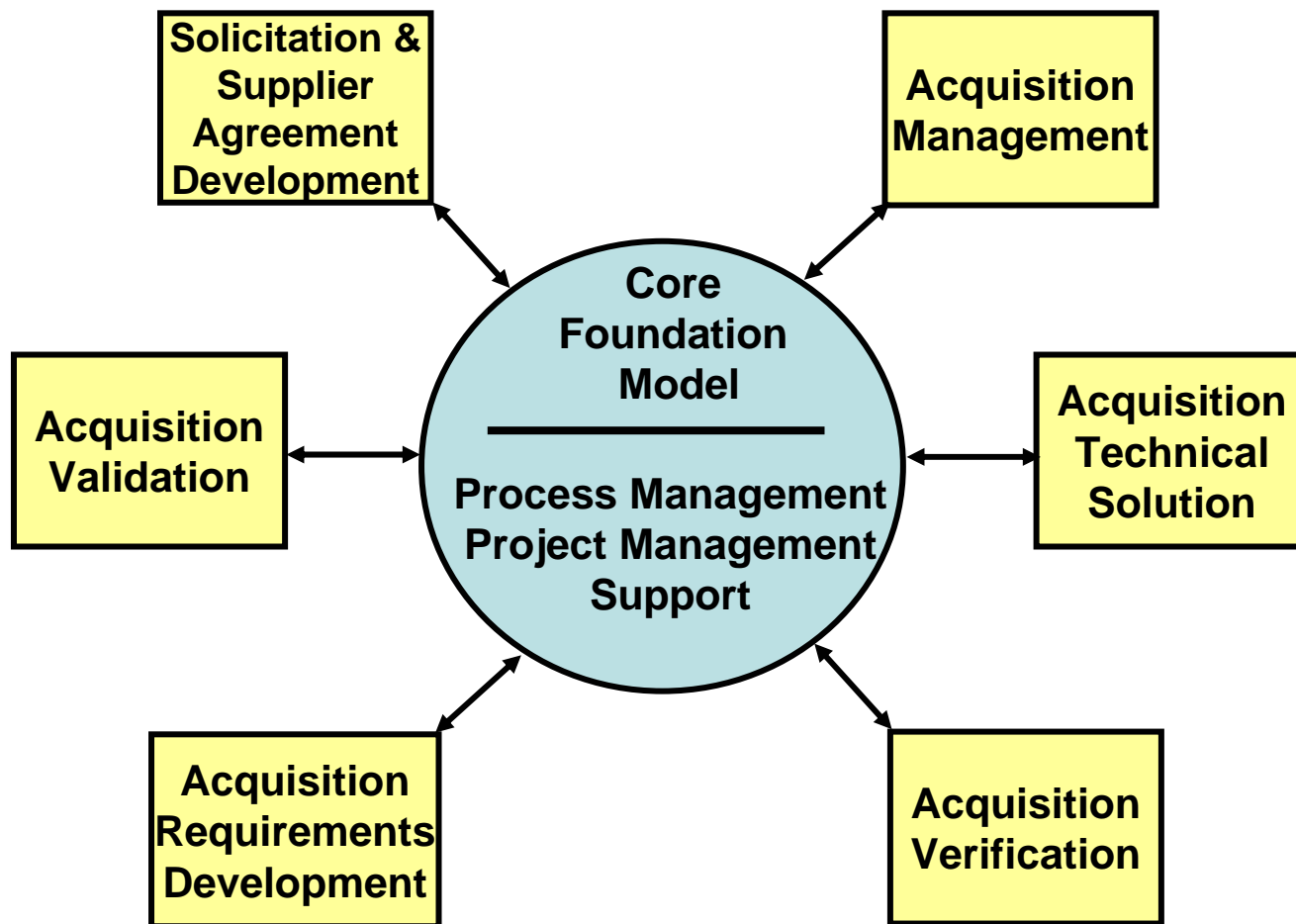
(Pilot/Revise)

Stakeholder Community

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 Validation

Core Foundation Model

Process Management
Project Management
Support

Acquisition Technical Solution

Acquisition Requirements Development

Acquisition Verification

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

Sep - Nov 2006	Conduct pilots with initial draft CMMI-ACQ baseline
Dec 2006 - Feb 2007	Update baseline based upon pilot findings and submitted change requests
	Develop training
March 2007	CMMI-ACQ available for stakeholder review
April 2007	CMMI-ACQ available for QA
April 30, 2007	Release CMMI-ACQ *Product Suite (Model, Method, Training)*

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*