Understanding and Leveraging a Supplier’s CMMI Efforts: A Guidebook for Acquirers

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15 November 2006
Briefing Outline

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Background

• NDIA hosted “Use of CMMI in Acquisition: Summit & Workshop” in Sep 05

• Purpose of the Summit was to look at a set of existing issues (representative):
  - Background on how organizations approach CMMI appraisal and why
  - Use of the Appraisal Disclosure Statement
  - Formal Guide for CMMI Usage for DoD
  - Training for DoD Acquisition Organizations in the use of CMMI

• Findings (Action Items) resulting from the Summit included (not comprehensive):
  - Complete Guidebook for use of CMMI in Acquisition
  - Recommendation for Guidebook topic coverage
  - Generate suggested input to RFP section L & M
• The Summit Results suggested the following Guidebook topics:
  - Interpreting the Appraisal Disclosure Statement (ADS)
  - List sources for help (FFRDCs, DCMA, others)
  - Generate suggested content for RFP Sections L & M
  - Background/description of CMMI esoteric content/issues
  - Getting processes transitioned/implemented rapidly on new programs
  - Processes in the IMP/IMS/SOW (achieving contractual commitment to execute)
  - Offeror approach to verifying compliance to proposed processes
  - Past performance measures to provide evidence of process performance
• Appendices:
  - Checklists
  - Contract Language
  - RFP language
• OSD and the CMMI Steering Group (CMMI-SG) identified this gap
• The CMMI-SG chartered a committee of Government, Industry, and Academic contributors to develop guidance for acquirers
  Hal Wilson (Northrop Grumman Corp)    Joe Wickless (SEI)
  Linda Rosa (Mitre)                    Mike Phillips (SEI)
  Mike Nicol (ASC/EN)                   Brian Gallagher (SEI)
  Jeff Dutton (Jacobs Engineering)      Joe Elm (SEI)
  Gene Miluk (SEI)
• Government Team is coordinating the final effort
  – taking this body of work and structuring it in Guidebook format for use by Program Managers
Issues

CMMI-DEV in an acquisition environment

**Intended Use:** CMMI (the original CMMI model) is designed for use within development organizations for internal process improvement, not from acquirers perspective

**Size:** CMMI is a comprehensive process model that exceeds 700 pages. Just another tome the PM must have knowledge on how to implement

**Training:** CMMI training focuses on the use of CMMI-DEV for process improvement, not leveraging the activities from an acquirer’s perspective

**Marketing:** “level-mania” too often has defeated desired behavior of deploying process improvement at program startup and throughout the development life cycle

Guidance in the effective use of CMMI-DEV by Acquirers does not exist
Issues -2

• These Issues lead to difficulty in:
  – understanding what specific benefits CMMI provides for the acquiring program office
  – understanding how CMMI reduces program risk
  – determining what to ask for regarding process capability
  – interpreting developer’s claims regarding maturity level ratings
  – discriminating between the process capability of competing suppliers
  – separating the “practitioners in the marketing department” from the “practitioners on the shop floor”
  – monitoring developer’s process capability and their implementation as applied to current programs
  – understanding how broadly the rating applies to the organization of interest to the acquirer
  – belief in the myth that CMMI is the “silver bullet”
Published Maturity Levels

- Published Maturity Levels may be based on a single Division or location

The new ADS will help clarify these claims
Executive Summary

This Guidebook intends to help acquisition organizations understand and apply CMMI-DEV in three ways:

- to provide guidance on how to request, interpret, and use the results of CMMI appraisals
- during source selection, to help identify and evaluate strengths, weaknesses, and risks that may be associated with a particular offeror/team approach
- throughout the execution of an acquisition program, to gather and interpret information for effectively monitoring contractor processes

Provide insight to what CMMI is... and is not
Guidebook Contents

• The guidebook provides the basic information that acquirers need in order to understand CMMI use by suppliers
  – explanations of capability and maturity levels
  – differences between continuous and staged model representations
  – high maturity/capability levels (levels 4 & 5)
  – addresses obscure elements of CMMI, such as equivalent staging
• Cautions that high capability and maturity level ratings do not of themselves guarantee program success
• This Guidebook intends to help clarify what high capability and maturity ratings can and cannot do for a program

Guidebook intends to demystify these terms
Guidebook Chapters (draft)

Introduction

Understand the Development Process Needs for the Program

Understand the Process Capabilities of Potential Suppliers

Structure the Contract and Award Fee Criteria to Address Process Risks

Monitor Supplier Process Performance After Award
Guidebook Chapter 1 (draft)

• Introduction
  – CMMI Fundamentals
  – CMMI Appraisals
  – Interpreting CMMI Ratings
  – The Structure of the Guidebook
Guidebook Chapter 2 (draft)

- Understand the Development Process Needs for the Program
  - Estimate Exposure to Process Risk
  - Build Process Capability into the Program
  - Relate Processes to the Program Life Cycle
  - Assess the Process Needs of the Program
Guidebook Chapter 3 (draft)

- Understand the Process Capabilities of Potential Suppliers
  - Request Recent Appraisal Results
  - Request Integrated Master Plan Documentation of Proposed Processes
  - Request Process Proposals in Critical Areas
  - Request Approach to Integration with Subcontractor Processes
  - Request Approach to Integration with Acquirer Processes
  - Request Historical Data on Process Performance
  - Evaluate Compliance of CMMI Process Deployment to ISO 9001-2000
  - Use Recent Post Award Appraisal Data from other Programs
  - Request Incorporation of Process Reviews into Proposed Program Schedules
  - Enable Process Compliance Evaluation During Execution
  - Perform Pre-Award Process Appraisals
Guidebook Chapter 4 (draft)

• Structure the Contract and Award Fee Criteria to Address Process Risks
  – Incorporate Process Reviews into the Program Schedule
  – Specify Post Award Appraisal
  – Specify Process-Based Award Fee Determinants
  – Require Risk Mitigation Plans and Activities
  – Specify Reporting of Process Statistics
  – Specify Access to Selected Process Artifacts
  – Approaches when Process Capability not Addressed in the Solicitation
• Monitor Supplier Process Performance After Award
  – Process Monitoring through Artifact Review
  – Process Monitoring through Review of Process Metrics and Audits
  – Contractor Team Process Reviews
Guidebook Appendices (draft)

- Appendix A - Questions & Checklists
- Appendix B - Understand the Development Process Needs of the Program (Implementation Guidance)
- Appendix C – Understand the Process Capabilities of Potential Suppliers (Implementation Guidance)
- Appendix D – Structure the Contract and Award Fee Criteria to Address Process Risks (Implementation Guidance)
- Appendix E – Monitoring Supplier Process Performance after Award (Implementation Guidance)
- Appendix F – SCAMPI-A Appraisal Disclosure Statement (ADS) Example Template
- Appendix G - Acronyms
Format for the Guidebook

- Readable (small) 40 pages for the PM
- Electronic delivery of additional material designed for implementation
- Linked appendices for online version
- Printed version (40 pages) with CD or with linked appendices

- Part of the CMMI Product Suite
- Incorporate into DAU training
- Update as our learning occurs
Current Status

- Committee chartered by CMMI Steering Group
- First draft completed and submitted for Steering Group review (Jul 06)
- Second draft completed and submitted for government review (Aug 06)
- Government team assumes leadership role for Guidebook completion (Oct 06)
- Guidebook content being restructured based on Government reviews on the initial drafts (Oct 06)
Path Forward

- Implement remaining set of comments from Government Review Team (Nov 06)
- Government review team to comment on restructured and revised Guidebook content (Nov 06)
- Incorporate Government Review Team comments (Dec 06)
- Quality, Integrity Checks (Jan 07)
- Public review (end of Jan 07)
Summary

• The Guidebook intends to provide information in three areas:
  – guidance on how to request, interpret, and use the results of appraisals
  – identify and evaluate strengths, weaknesses, and risks that may be associated with a particular offeror/team approach
  – gather and interpret information for effectively monitoring contractor processes

• The Guidebook provides the basic information to apply CMMI-DEV on acquisition programs
  – explanations of capability and maturity levels
  – differences between continuous and staged model representations
  – defines equivalent staging & high maturity/capability levels (levels 4 & 5)

• The Guidebook designed for use by the Program Manager as a ready source of information and by the Program Management Staff by including detailed implementation guidance in referenced Appendices
Open Discussion