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Life Cycle Software Engineering Center

CMMI FOR SMALL BUSINESS PILOT Project

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Cepeda Systems & Software Analysis, Inc.

Topics

- Project Purpose
- Other Initiatives Related to CMMI and Small Businesses
- Established Project Goals
- Pilot Companies Overview
- The Project Methods/Events
- Preliminary Observations
- Feedback from Pilots
- References

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HSV CMMI-SME Pilots:

Project Purpose

Definition: A joint project performed by the partnership between the SEI and AMCOM Software Engineering Directorate (SED) to establish the technical feasibility of developing guidance and other special-purpose transition mechanisms to support adoption of CMMI by small and medium enterprises (SMEs).

SMEs to be Huntsville companies with 25 to 250 employees in Huntsville

Important to AMCOM Software Engineering Directorate: provide the region with a system-wide approach to help small companies improve their project management and engineering capabilities

Interest in CMMI for Small Organizations is Global in Scope

University of Ulster is funded by UK Ministry of Defense to research barriers and provide solutions to CMM(I) adoption by the Northern Ireland IT business sector

Japanese government is contemplating a “CMMs Research Institute”, one of whose research aims would be to support adoption of CMMI by small-medium enterprises (SMEs)

Govt of Tasmania is exploring initiatives to support adoption of CMMI for SMEs in their region

Fraunhofer Institute at U of Md funded by state of Maryland to provide educational support to SMEs

Recent SEI Involvement in SME Research

SEI concluded a 3 year Congressionally-funded project researching information technology adoption barriers for small manufacturing organizations (TIDE program):

- Included a market study on likely characteristics of small organizations who would benefit from adoption of CMMI
- SEI adapted adoption support materials from several programs to support successful adoption of complex information technologies by demonstration projects
- SEI worked with several small companies in demonstration projects, gaining valuable insight into the general differences between technology adoption in small and large companies

SMEs have articulated many of same problems as TIDE re. CMMI

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HSV CMMI-SME Pilots:
Established Project Goals

- Work with at least 2 companies
- Exercise at least 3 CMMI Process Areas for each company
- Codify recommendations for how to package, sell, appraise, train, implement CMMI for SME's to extent reasonable based on our pilots
- Be able to articulate business case for small companies to adopt CMMI
- Generate "follow-on" path to extend initial pilots
- Present project results at 2004 SE2 and the Annual CMMI User Technology Conference
- Provide SEI CMMI/SCAMPI projects w/appropriate change requests/feedback

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HSV CMMI-SME Pilots:
Pilot Companies Characteristics

- Both pilots are involved in product development for Government or engineering services to support product development
- One pilot company has a manufacturing element
- One pilot SME is a HUBZone company
- Both have recent experience with ISO 9000

Companies selected via formal process administrated by HSV Chamber of Commerce, SEI, and Core SME Team

Company Overview

Analytical Services, Inc. is a premier provider of management, technical, information technology, and organizational and professional development products and services to government, commercial and international customers

- Incorporated in 1992, 8(a) Status 1995-2004
- Hispanic, Woman-Owned, Small Disadvantaged Business
- Over 250 Employees & Growing – Headquarters in Huntsville, Alabama
- 3 Offices: Montgomery, Al; Vicksburg, Ms; Shalimar, Fl
- Top Secret Facility
- ISO 9001:2000 Registered 16 April 2003

Core Capabilities

We are committed to 100% customer satisfaction! To ensure our customer's success, our team of professionals have the skills, tools, and resources to be the best in our markets

- Information Technology
- Engineering and Scientific Analysis
- Systems Engineering/Program Management
- Professional and Organizational Development

Corporate Overview

- Cirrus Technology Inc. (CTI)
  - Incorporated May 1998
  - Headquarters: Huntsville, AL
  - Satellite offices at: Ft Rucker; Ft Bragg; Warner Robins, GA; Atlanta, GA; Ft Belvoir; Eglin AFB; Crystal City & Hampton, VA; Rock Island, IL; Albuquerque, NM; Langley, VA (AFB & NASA); Patrick AFB; Buckley AFB; MacDill AFB

Certifications

- Small Business
- Small Disadvantaged Business
- 8(a)
- HUBZone
- Service Connected Disabled Veteran Owned

Cirrus Technology Inc.

Corporate Capabilities

- Logistics
- Engineering
- Manufacturing (ISO 9000 compliant)
- Test & Evaluation
- Information Technology
- Security
- Intelligence
- Support Services

SME-Pilot Events/Activities

Site Kickoff Meeting → Gap Analysis Session → Monthly Working Sessions → Weekly Teleconferences

- Presented a 2 hr. CMMI Overview Tutorial that covered Level 2 & 3 and focused upon the typical business impacts related to the area
- Business Analysis to capture high impact Process Areas for the company
  - Had simple “thumbs-up” voting technique to determine level impact
  - Also polled participates for the level of impact (H M L)
  - The high impact areas were obvious and for each company it was easy to select the Process Areas to focus on for the pilot

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SME-Pilot Events/Activities

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Site Kickoff Meeting	Gap Analysis Session	Monthly Working Sessions	Weekly Teleconferences

- The Process Areas for each company:
  - Project Management, Requirements Management, Measurement & Analysis
  - Project Management, Requirements Management, Project Monitoring & Control
- Decided that even though not selected; informally working on OPF

SME-Pilot Events/Activities

Site Kickoff Meeting

Gap Analysis Session

Monthly Working Sessions

Weekly Teleconferences

- A workshop was developed and delivered to pilot sites to analyze the process areas-the concepts/methods used for the SCAMPI B/C development project were adapted for this audience:
  - Current practice documented and mapped to CMMI model components
  - Interpretation of model intent for the environment made and gaps are documented
  - Each practice evaluated for risk of implementation and mapped to the gaps found
- Created detailed assignments for follow-on work – pilot projects assigned to take a first cut at defining processes/procedures to fill gaps

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SME-Pilot Events/Activities

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Site Kickoff Meeting

Gap Analysis Session

Monthly Working Sessions

Weekly Teleconferences

- Monthly Face-to-Face sessions with whole team present
- Provide additional/continuing help/guidance to work through actions
  - in development of PI Action Plan
  - tutorial on writing processes/procedures
  - feedback on reviewed material

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SME-Pilot Events/Activities

Life Cycle Software Engineering Center

Site Kickoff Meeting

Gap Analysis Session

Monthly Working Sessions

Weekly Teleconferences

- Weekly teleconferences keep the project progressing
  - Review Action Items
  - Provide feedback if needed on recently reviewed material
  - Provide guidance on any issues/problems encountered

Preliminary Observations

- Minimal training in the CMMI gives enough of sense of the model to nicely connect to their business – do not have to have the 3 day course
- The collaborative “mini-appraisal” during the Gap Analysis session provided specific insight into how the model can be implemented to add value to the organization
- Experience with the ISO 9000 is very helpful but does not substitute for knowledge and understanding of the CMMI
  - ISO terminology differs from CMMI terminology
- The ISO experience sensitized one company to the importance of a measurement program – they were excited to find the guidance in CMMI

Feedback from Pilots

"...identifying the gaps in all three process areas has helped in current project tasks "

"... the SEI/SED Team added significant value to all the activities : Overview Training, Business Analysis, Gap Analysis, Action Plan Definition...."

Most Challenging so far: " Addressing our issues of diverse organization with the technical solution, project planning and execution processes"

"..the team provided at least an order of magnitude reduction in time to do the activities ...."

Possible Future Events

Things that have been discussed as possibilities to involve Huntsville regional (as well as other) stakeholders (some of these have been finalized):

- A special offering of SEI 3-day Intro to CMMI course that includes implementation information for the PAs that were exercised in the two pilots
- A regional workshop associated with 2004 SE2 Conference to disseminate the approaches and lessons learned from the pilots
- Formation of a regional consortium that would support a "virtual EPG" for its members, enabling them to sustain a common infrastructure for process improvement without each one incurring the full cost

Staying in Touch with Huntsville Pilots' Information

- Presentation, possible tutorial to highlight successful approaches in the pilots will be presented at 2004 SE2 in Huntsville in March 2004
- MIGHT be a presentation at SEI SEPG 2004
- Technical Report will be produced at end of pilots by SEI/SED Team summarizing approaches and lessons learned
  - Will be publicly available from SEI publications section of SEI web site

References

For the TIDE Project:
www.sei.cmu.edu/tide/

"A Family of Scampi Appraisal Methods": presentation by Will Hayes, Gene Miluk, Dave Ketson, 2003
http://www.sei.cmu.edu/cmmi/presentations/sepg03.presentations/scampi-project.pdf