CMMI Appraisal Results

SEPG 2003
February 25, 2003

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Software Engineering Institute

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### CMMI Appraisal Results

**1. REPORT DATE**  
25 FEB 2003

**2. REPORT TYPE**

**3. DATES COVERED**  
00-00-2003 to 00-00-2003

**4. TITLE AND SUBTITLE**  
CMMI Appraisal Results

**5a. CONTRACT NUMBER**

**5b. GRANT NUMBER**

**5c. PROGRAM ELEMENT NUMBER**

**5d. PROJECT NUMBER**

**5e. TASK NUMBER**

**5f. WORK UNIT NUMBER**

**6. AUTHOR(S)**

**7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)**
Carnegie Mellon University, Software Engineering Institute, Pittsburgh, PA, 15213

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**9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)**

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**11. SPONSOR/MONITOR’S REPORT NUMBER(S)**

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**13. SUPPLEMENTARY NOTES**
presentation from the Software Engineering Process Group Conference (SEPG 2003), 24-27 February, Boston, MA.

**14. ABSTRACT**

**15. SUBJECT TERMS**

**16. SECURITY CLASSIFICATION OF:**

<table>
<thead>
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<th>a. REPORT</th>
<th>b. ABSTRACT</th>
<th>c. THIS PAGE</th>
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**17. LIMITATION OF ABSTRACT**
Same as Report (SAR)

**18. NUMBER OF PAGES**
23

**19a. NAME OF RESPONSIBLE PERSON**

*Standard Form 298 (Rev. 8-98)*

Proscribed by ANSI Std Z39-18
Presentation Objective

Provide a first look in detail at the results of CMMI® based appraisals

Address some questions and concerns regarding the use of CMMI as compared to CMM®

Encourage appraisal reporting
Outline

Demographics of Organizations Reporting SCAMPI℠ Appraisals
• Site Type
• First Time vs reappraisal
• Geographical Distribution
• Organizational Size

How are organizations using CMMI?
• Model and Method Use
• Staged vs Continuous
• Model scope alternatives
• Number of projects appraised

What results are being reported?
• Maturity Profile
• Process area satisfaction

Concluding Remarks
Data Description

Data as of Feb 18, 2003

- many year end submissions included
- presentation will be available from http://www.sei.cmu.edu/sema

Selected appraisals based on use of CMMI v1.0 or CMMI v1.1

For results only used SCAMPI v1.1 (Class A) appraisals

And, pulled data on these organizations’ most recent SW-CMM when available
Where are the Appraisal Results Coming From?

40 Companies
- 2 appraised 8 organizations
- 1 appraised 5 organizations
- 1 appraised 4 organizations
- 1 appraised 3 organizations
- 8 appraised 2 organizations
- 27 appraised 1 organizations

71 Organizations
- Commercial 29
- DoD Contractor 22
- Civil Contractor 8
- Military Org 8
- Civil Org 2
- In House Dev 2
Appraisal History

50 organizations had not reported any prior assessments before using CMMI
- 24 used CMMI v1.0
- 26 used CMMI v1.1

21 organizations were reappraised and the prior appraisal used the following models
- 14 used CMM v1.1
- 1 used SA-CMM
- 6 used CMMI v1.0
Geographic Distribution of Appraisal Results

Countries

- USA 34
- Japan 13
- Australia 8
- France 4
- India 4
- United Kingdom 2
- Taiwan 2
- Denmark 1
- Russia 1
- South Korea 1
- Switzerland 1
Outline

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Concluding Remarks
# Model and Appraisal Method Use

<table>
<thead>
<tr>
<th></th>
<th>CMMI v1.0</th>
<th>CMMI v1.1</th>
<th>Total</th>
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<tbody>
<tr>
<td>SCAMPI v1.1</td>
<td>3</td>
<td>33</td>
<td>36</td>
</tr>
<tr>
<td>SCAMPI v1.0</td>
<td>32</td>
<td>5</td>
<td>37</td>
</tr>
<tr>
<td>SCE</td>
<td>4</td>
<td></td>
<td>4</td>
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<tr>
<td><strong>Total</strong></td>
<td>39</td>
<td>38</td>
<td>77</td>
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Note: the 71 organizations account for 77 CMMI based appraisals
# Model Scope and Representation

<table>
<thead>
<tr>
<th>Scope</th>
<th>Staged</th>
<th>Continuous</th>
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<tr>
<td>SW + SE</td>
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<tr>
<td>SE</td>
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</table>
Organization Size

N = 32
Number of Projects Appraised

N = 33

N of Appraisals

Number of Appraised Projects
Observation: Selected Architecture and Sequence of Appraisals

In the few instances of repeated use of the models, the sites used the same representation for all appraisals.

However, some indication of using SCAMPI A method with the continuous representation to perform a “gap analysis” prior to a SCAMPI A using the staged representation.
Outline

Demographics of Organizations Reporting SCAMPI Appraisals
  • Site Type
  • First Time vs reappraisal
  • Geographical Distribution
  • Organizational Size

How are organizations using CMMI?
  • Model and Method Use
  • Staged vs Continuous
  • Model scope alternatives
  • Number of projects appraised

What results are being reported?
  • Maturity Profile
  • Process area satisfaction

Concluding Remarks
Maturity Profile - All CMMI v1.1, SCAMPI v1.1

N = 33
## Maturity Profile – 2

<table>
<thead>
<tr>
<th>Maturity Level</th>
<th>First Time Reports</th>
<th>Reappraised Organizations</th>
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<tbody>
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<tr>
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<td>4</td>
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## Change in Maturity Level Rating

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<tr>
<td>5</td>
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</table>

### Current Maturity Level

- Level 1: 0 Change
- Level 2: 0 Change
- Level 3: 1 Change
- Level 4: 0 Change
- Level 5: 0 Change
Process Area Satisfaction – ML2

![Bar chart showing the percentage of process areas satisfied for ML2. The areas are reqm, pp, pmc, sam, ma, ppqa, and cm, with sam showing the highest satisfaction at around 80%.]
Process Area Satisfaction – ML3

![Bar Chart](Attach:barChart.png)

Pct Appraisal Satisfied vs Process Area

- rd
- ts
- pi
- ver
- val
- opf
- opd
- ot
- rsk
- it
- ism
- dar
- oei

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Version 1

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Process Area Satisfaction – ML4&5

![Bar Chart]

- opp
- qpm
- oid
- car

Pct Appraised Satisfied

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
Concluding Remarks

Has the bar been raised?
• New process areas do not seem to be appraised as unsatisfied more frequently than other process areas
• New process areas are not being “avoided”

Model Scope
• Organizations seem to mostly be using the Software and Systems Engineering scope
• But, note that other alternatives are being used and each discipline has been used
What’s Next?

CMMI Community Process Profile
• Based exclusively on SCAMPI A v1.1 and CMMI v1.1
• Will include staged and continuous results
• Will be published twice a year

Additional Data Collection
• Start to collect B and C data
Questions and Contact Info

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To submit Appraisal Packages
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To check for new forms
http://www.sei.cmu.edu/sema/packet.html