Managing Best Practices

Adapting CMMI Policies and Procedures Used in One Part of an Organization to Another

Scott Sherrill

Georgia Tech Research Institute
Overview

- Questions
- About GTRI
- CMM/CMMI at GTRI
- ELSYS Laboratory
- ITTL Laboratory
- Timeline for Implementation at ITTL
  - Prior to 2004
  - 2004 to Present
  - Future
GTRI Organizational Structure

Vice President GT
Director, GTRI
Stephen E. Cross

Deputy Director
David E. Parekh

Leadership Council

Advisory Council

Fellows Council

Research Laboratories

Administration
Janice P. Rogers

Business Operations
Charles E. Brown

Strategic Initiatives
George B. Harrison

Aerospace Transportation & Advanced Systems
James M. McMichael

Electronic Systems
William S. Rogers

Electro-Optical Systems
Gisele Bennett

Health & Environmental Systems
Jeffrey J. Sitterle
(Interim Director)

Huntsville Research
Barry D. Bullard

Information Technology & Telecommunications
Randolph M. Case

Sensors & Electromagnetic Applications
Robert N. Trebits

Signature Technology
John G. Meadors
Personnel Statistics  
As of October 2005

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Faculty</td>
<td>552</td>
</tr>
<tr>
<td>Research Temp/Retired</td>
<td>94</td>
</tr>
<tr>
<td>Classified Professional</td>
<td>29</td>
</tr>
<tr>
<td>Classified Regular</td>
<td>238</td>
</tr>
<tr>
<td>Support Temp/Retired</td>
<td>126</td>
</tr>
<tr>
<td>Students</td>
<td>237</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,276</strong></td>
</tr>
</tbody>
</table>
GTRI Financial Statistics
FY05 Major Customers

- Army: 26%
- Navy: 8%
- Air Force:
- DoD/Other: 17%
- Fed/Other: 15%
- Industry Fed Subcontract: 9%
- Industry: 7%
- State & Local: 4%
- DoD/Other: 9%
- Fed/Other: 8%
GTRI Financial Statistics

Historical Volume

Year

1998 1999 2000 2001 2002 2003 2004 2005

Dollars in Millions

0 20 40 60 80 100 120 140

106.4 102.5 105.9 108.5 110.7 119 126.8 128.1
CMM/CMMI at GTRI

- Electronic Systems Lab (ELSYS) CMM Level 3
- Huntsville Lab functioning at CMM Level 4
- Information Technology and Telecommunications Lab (ITTL) has committed to becoming CMMI Level 3
- ELSYS and ITTL working to be jointly assessed on CMMI continuous model in calendar year 2006
Comparison of ELSYS and ITTL

- Independently Managed
- Comparable Size (ELSYS slightly larger)
- Both perform DOD centric work
- ELSYS has greater percentage of work from small number of customers
- ITTL has greater variety of customer types
- ELSYS main customers are requiring CMM/CMMI
- Some ITTL customers also requiring CMM/CMMI, but many others are not
CMM/CMMI at ELSYS

- Multi – Year Effort
- Costs shared with GTRI
- Intended to be basis for other labs becoming certified
- Certified CMM Level 3 in 2003
- Processes defined by Engineering Processes and Procedures Manual (EPPM)
- Tailored for individual projects
- EPPM being modified to address CMMI issues
CMMI Issues at ITTL

- Commitment to certify required to work on some contracts
- Certification necessary to bid on others
- Many of our customers don’t care about CMMI
- Varying levels of motivation for certification
Timeline for Implementation at ITTL

- Prior to 2004
- 2004 to present
- Future
Prior to 2004

- Lab growing, recognized for doing good work
- Most Projects Well Managed
- Specifics of Project Management decided at Project Level
2004 to present

- January 2004 – appointed dedicated QA Manager
- Told to jointly pursue CMMI and ISO certification
- April 2004 – QA Manager recommends only pursuing CMMI certification, approved by lab management
- April – Sep 2004 implementation plans developed
- September 2004 – Lab Director announces plan to pursue certification to laboratory
2004 to present (cont)

- Sep 2004 - Initial implementation efforts
- Joint Management Steering Group with ELSYS
- Level of support at project level mixed
- Strong support at management level
- Projects had not budgeted for this effort in current projects
2004 to Present (cont)

- Projects expected to have
  - Project Plan
  - Written Requirements
  - Written Design
  - Kept current
  - Controlled Changes
  - Budget for Quality in New Bids
2004 to Present (cont)

• EPPM
  • Large Document
  • Evolved over 5+ years at ELSYS
  • Mostly applicable to ITTL projects
  • Too much to implement all at once
  • Some may be overkill on small projects
  • Identified key processes for all projects
  • Tailor as appropriate for individual projects
2004 to Present (cont)

- Inter lab relationships
  - ELSYS providing valuable support and guidance
  - ITTL usually accepting support and guidance
  - MSG meetings very valuable for big picture
  - Generally follow same processes
  - Occasionally we vary on specific implementation details
  - Working jointly to modify EPPM to meet CMMI standards
  - Teamwork benefits overall inter-lab relationship
2004 to Present (cont)

- ITTL QA Department
  - Dedicated QA Manager
  - 3-4 other QA personnel
  - QA people also do project work
  - Not on projects where they do QA
2004 to Present (cont)

- Adopting existing EPPM used by another lab
  - Very valuable – shown to work for similar organization
  - More similarities than differences in work performed
  - Some resistance due to culture of autonomy
  - Much of value of EPPM is not in the EPPM itself – it is in the blood, sweat and tears involved in developing it
  - Overall, having EPPM to adopt is quite valuable, but it doesn’t remove the need to learn from our own mistakes – there is value in the journey
2004 to Present (cont)

• Support for CMMI processes within lab
  • Initially quite varied
  • Frank and open exchange of ideas
  • Management support essential
  • Many with high level of resistance now supportive
  • Still some that are not
2004 to present (cont)

- Northrop Grumman external audit
  - October 2005
  - Done on JMPS program for their SAM process
  - 19 point checklist
  - Overall feedback very positive
  - 3 comments
  - Asked for one supplemental document
  - Not a real audit – we have a long way to go
2004 to present (cont)

- Lessons (being) learned
  - It will take longer than you think
  - Very valuable to be helped by successful group
  - Also value in learning from your own mistakes
  - Management support and commitment essential
  - People will back you if you can show value
Future

- Work with ELSYS to modify EPPM
- Joint assessment 2006 (Continuous Model, hope to show at least Level 2 on all KPAs)
- Joint assessment 2008 (Continuous Model, hope to show at least Level 3 on all KPAs)
- Continuous Improvement
• Questions/Comments???

• scott.sherrill@gtri.gatech.edu

• (404)894-1190 (until ~Feb2006)