Are You Ready for an External Audit?

Carolyn Rodda Lincoln
Catapult Technology
Agenda

- Context
- Measure
- Artifacts
- Benefits

® CMMI is a registered in the United States Patent and Trademark Office by Carnegie Mellon University
Context

- External Audit is x months away
  - CMMI®
  - ISO 9001:2000
  - ISO 20000:2005
- Senior management wants to know if you are ready (or when you will be ready)
- Projects seem to be implementing standard/model
Must gather and index artifacts
- ISO compliance matrix
- Process Implementation Indicator Database (PIID) for CMMI®

Artifacts are everywhere
- Intranet
- Project shared drives
- CM tools

Now what do you do?
Measure

- Show progress by percent complete on gathering and verifying artifacts
- Estimate audit readiness by modeling trend
- Store artifacts in central location
- Hyperlink artifacts to mapping spreadsheet
Summary CMMI Compliance

Measure (cont)
Goal is to have all “blue’s”
Graph shows actual progress
Can also model planned progress

<table>
<thead>
<tr>
<th>Time</th>
<th>Max Red</th>
<th>Max Yellow</th>
<th>Max Green</th>
<th>Max Blue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audit – 4 months</td>
<td>20%</td>
<td>25%</td>
<td>30%</td>
<td>25%</td>
</tr>
<tr>
<td>Audit – 3 months</td>
<td>15%</td>
<td>20%</td>
<td>20%</td>
<td>45%</td>
</tr>
<tr>
<td>Audit – 2 months</td>
<td>5%</td>
<td>10%</td>
<td>20%</td>
<td>65%</td>
</tr>
<tr>
<td>Audit – 1 month</td>
<td>0%</td>
<td>0%</td>
<td>10%</td>
<td>90%</td>
</tr>
</tbody>
</table>
Measure (cont)

- Lack of planned progress can encourage participation
- Ideally, have all “blue’s” a month before audit
  - Need to do one last check
  - May need to copy to an auditor’s preferred format
  - Need to prepare interviewees
Create mapping document

- Text of model or standard – can be in form of statement or question
- Applicable process to satisfy
- Typical evidence
- Actual artifacts for project
- Status
### CMMI® Example

<table>
<thead>
<tr>
<th>Practice</th>
<th>Text</th>
<th>Process</th>
<th>Typical Direct</th>
<th>Typical Indirect</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>GP 2.4</td>
<td>Assign responsibility and authority for performing the process, developing the work products, and providing the services of this PA’s process</td>
<td>Project planning process</td>
<td>Project plan roles and responsibilities, work authorization</td>
<td>Org chart with names, contact list with roles</td>
<td>Green</td>
</tr>
</tbody>
</table>

Would have actual evidence before status column
ISO 9001:2000 Example

<table>
<thead>
<tr>
<th>Standard</th>
<th>Process</th>
<th>Typical Evidence</th>
<th>Status</th>
</tr>
</thead>
</table>

Would have actual evidence before status column
Establish a location for artifacts
  - Only for external audit
  - Organized for ease of audit
  - Subfolders for recurring items such as status reports

As find evidence, move artifacts to audit location

Hyperlink them to mapping document
Artifact work can be done by projects or QA

- For initial audit, projects participate
- For later external audits, QA updates mapping as part of internal audits
  - May replace older version of same document
  - May add to recurring
- QA always does verification
Count number of each status
Display on graph
- Number per process area / section of standard
- % complete
  - Process area / section
  - Project
  - Across all projects
- Shows trends over time
  - Week
  - Month
Artifacts (cont)

![Project X Compliance Chart]

- Verified Practices
  - Jan-06: 50
  - Feb-06: 100
  - Mar-06: 200
  - Apr-06: 350
  - May-06: 400

- % Complete
  - Jan-06: 20
  - Feb-06: 40
  - Mar-06: 60
  - Apr-06: 80
  - May-06: 100

The chart shows the Project X Compliance from January to May 2006, with a significant increase in verified practices and % complete from April to May.
Benefits

- Demonstrate progress
  - Encourage projects
    - Locate artifacts
    - See gaps
    - Create them as needed
  - Show status to management
  - Forecast “ready” date
Benefits (cont)

- Artifact Mapping
  - No value to the project – only for external audit
  - Less onerous if done continuously with internal audits
  - As QA locates artifacts for internal audit,
    - Copy or replace in audit location
    - Update hyperlink
Mapping is VERY time-consuming
- CMMI® - about 300 practices in levels 2-3
- ISO 9001:2000 – about 270 clauses
- Estimate 30 minutes per practice/clause per project
- 150 hours or 19 staff-days per project
- It ISN’T fun!!!
QUESTIONS?