On Your Mark, Get Set, Go!
Effective Solutions to Prepare for a CMMI® Based Appraisal

Electronics, Intelligence and Support Operating Group

Lisa Ming
Overview

Preparing for CMMI® Class A appraisals can be a very costly and chaotic experience without early detailed planning.

- Several innovative and cost effective approaches were developed to address all aspects of CMMI® Class A appraisal preparation.

- A series of appraisals were conducted allowing the greatest level of “reusability” of appraisal effort and artifacts:
  - Internal continuous Class C appraisals
  - “Dry Run” SCAMPI℠ B independent appraisal
  - “Benchmark” SCAMPI℠ A independent appraisal

® CMM and CMMI are registered in the U.S. Patent and Trademark Office by Carnegie Mellon University
℠ SCAMPI is a service mark of Carnegie Mellon University
Prior Appraisal Experience

• Four previous SW CMM® and two EIA 731 appraisals
  • SEI CMMI® SE/SW v1.1 (2005)
  • SEI CMMI® -DEV+IPPD v1.2 (2008)

• Second CMMI® appraisal resulted in
  - Improved project satisfaction
    - Less intrusive
    - Better communication
    - Less Rework; “Bring me a rock”
  - Broader project organizational coverage
  - Reduction in amount of artifacts collected per Process Area (PA), per project
  - Reduction in Process Group effort to support appraisal activities
Approaches Leveraged for a Successful CMMI® Appraisal

• Project Selection
  - Real-time trade studies resulted in optimal organizational scope

• Continuous Class C Appraisal
  - Internal appraisal was conducted over time, proven to be less intrusive

• Artifact Collection Sampling
  - Sampling method implemented to minimize cost

• Communication
  - Microsoft SharePoint® was used as a collaboration tool, enhancing communication

• Automation
  - Developed utilities to increase efficiency

® SharePoint and Excel are Trademarks of Microsoft Corporation
Path to CMMI® Appraisals

Approved Project Selection

Appraisal Planning

Project Provides Artifacts, Conducts Continuous Class C Appraisal Practice Implementation Indicator Database

CMMI® Class B
Q4 ‘07

Corrective Actions

CMMI® Class A
Appraisal
Q2 ‘08

Typical path for a SCAMPI™ A takes 18 months

Corrective Actions
Approaches Leveraged for a Successful CMMI® Appraisal

- **Project Selection**
  - Real-time trade studies resulted in optimal organizational scope

- Continuous Class C Appraisal
  - Internal appraisal conducted over time, proven less intrusive

- Artifact Collection Sampling
  - Sampling method implemented to minimize cost

- Communication
  - Used Microsoft SharePoint® as a collaboration tool to greatly enhance communication

- Automation
  - Developed utilities to increase efficiency
Project Selection Approach

Without a representative sample of projects, appraisal results cannot be generalized to the Organizational Unit (OU) being appraised

- A Formal Decision Analysis and Resolutions Approach (trade study) was used to determine the organizational scope, based on maximizing the achievement of meeting the selection criterion
  - Process Area (PA) coverage
  - Dollar value
  - Equivalent peak staffing
  - Project size
  - Application domain (Lines of Business)
  - Geographic dispersion
  - Development Lifecycle Model (spiral, waterfall, incremental)
  - Project types (SDD, LRIP, Maintenance)

- A Microsoft Excel® spreadsheet was developed to capture project characteristics, and calculate coverage of criteria, based on project selections
  - Selected PAs for non-focus project to meet minimum coverage criteria of three instantiations per PA
**Project Selection Approach - Example**

### Alternative 1 (5 Projects): Project 1: Focus Project

**Non Focus Projects:**

- **Project 2** (SAM, DAR, REQM, RD, TS, PI, VER, VAL, MA)
- **Project 6** (PP, PMC, IMP, RSKM, SAM, CM, PPQA, DAR, TS, PI, VER, VAL)
- **Project 8** (PP, PMC, IMP, RSKM, MA); **Project 9** (SAM, CM, PPQA, REQM, RD)

### Alternative 2 (7 Projects): Project 1: Focus Project

**Non Focus Projects:**

- **Project 2**: (SAM, DAR, REQM, RD, TS, PI, VER, VAL, MA)
- **Project 3** (PPQA); **Project 4** (DAR, SAM, RD, REQM, TS, PI, VER, VAL, MA)
- **Project 5** (SAM, CM); **Project 6** (PP, PMC, IMP, RSKM, TS, PI, VER, VAL)
- **Project 7** (PP, PMC, IPM, RSKM, CM, PPQA, DAR)

### Alternative 3 (8 Projects): Project 1: Focus Project

**Non Focus Projects:**

- **Project 2** (SAM, DAR, REQM, RD, TS, PI, VER, VAL, MA)
- **Project 3** (PPQA, SAM); **Project 8** (RD, REQM, MA); **Project 5** (SAM, CM)
- **Project 6** (PP, PMC, IPM, RSKM, TS, PI, VER, VAL, SAM, DAR)
- **Project 7** (PP, PMC, IPM, DAR, RSKM, PPQA, CM); **Project 9** (REQM)

<table>
<thead>
<tr>
<th>Alternative</th>
<th>PAs</th>
<th>Staffing</th>
<th>$</th>
<th>Size</th>
<th>Site</th>
<th>LOB</th>
<th>Type</th>
<th>Lifecycle Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>All</td>
<td>47%</td>
<td>62%</td>
<td>No Small</td>
<td>NY, TX, NJ</td>
<td>All</td>
<td>SDD</td>
<td>All</td>
</tr>
<tr>
<td>2</td>
<td>All</td>
<td>54%</td>
<td>73%</td>
<td>All</td>
<td>No NY</td>
<td>All</td>
<td>SDD</td>
<td>All</td>
</tr>
<tr>
<td>3</td>
<td>All</td>
<td>54%</td>
<td>69%</td>
<td>All</td>
<td>All</td>
<td>All</td>
<td>SDD</td>
<td>All</td>
</tr>
</tbody>
</table>
Project Selection Benefits

• Resulted in selecting the optimal, representative sample of focus and non-focus projects within the Organizational Unit
  - Supported discussions with lead appraiser on organizational scope

• Real-time trade studies enabled response to project fluidity over long period of time

• Easily updated trade studies monthly to reflect current information
  - New projects
  - Completed projects
  - Unplanned events (stop order)
Approaches Leveraged for a Successful CMMI® Appraisal

• Project Selection
  - Real-time trade studies resulted in optimal organizational scope

• Continuous Class C Appraisal
  - Internal appraisal conducted over time, proven less intrusive

• Artifact Collection Sampling
  - Sampling method implemented to minimize cost

• Communication
  - Used Microsoft SharePoint® as a collaboration tool to greatly enhance communication

• Automation
  - Developed utilities to increase efficiency
Continuous Class C Appraisal Approach

Continuous approach proven more successful than previously performed discrete events

• Key components of the continuous approach are:
  - Dedicated team of CMMI® & process experts
  - Projects/Groups delivered artifacts over time
  - Emphasized use of objective evidence
  - “Interviews” conducted to resolve inconsistencies
  - Communicated corrective actions

  Outcome: continuously populated the Practice Implementation Indicator Database (PIIDB)

• Developed a profile of results (strengths and weaknesses) over time
  – Drove process improvement engine
  – Also used as risk reduction in preparation for SCAMPISM A
Continuous Class C Appraisal Approach

<table>
<thead>
<tr>
<th>Category</th>
<th>Grouping</th>
<th>Team of Reviewers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management</td>
<td>PP, PMC, IPM, GP2.2, GP2.3, GP2.4, GP2.7</td>
<td>✓</td>
</tr>
<tr>
<td>SAM</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>RSKM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engineering</td>
<td>REQM, RD</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>TS, PI, VER, VAL</td>
<td>✓</td>
</tr>
<tr>
<td>Support</td>
<td>CM, GP2.6</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>PPQA, GP2.9</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DAR</td>
<td></td>
</tr>
<tr>
<td>Measurement</td>
<td>MA, QPM, CAR, GP2.8, GP2.10</td>
<td>✓</td>
</tr>
<tr>
<td>Organizational</td>
<td>OPD, OPF, GP2.1, GP3.1, GP3.2</td>
<td>✓</td>
</tr>
</tbody>
</table>

- Dedicated team assigned to review Process Area (PA) Specific Practices (SPs) and related Generic Practices (GPs) across PAs
- Grouping based on how an artifact supports multiple PAs and GPs
  - This approach reduced duplication of effort
    - Example:
      Organization Chart is used to support both Integrated Project Management (IPM) SP 3.2 Establish the Integrated Team Structure and GP 2.4 Assign Responsibility across all PAs
- Overall approach was recognized by our CMMI® lead appraiser as best practice
Continuous Class C Appraisal Benefits

• Reusability of information across appraisal events (Class C, SCAMPI<sup>SM</sup> B & A)
  - Practice Implementation Indicator Data Base (PIIDB)
  - Description of the artifact and how it satisfies a given CMMI<sup>®</sup> practice

• Less intrusive to projects
  - Project delivered artifacts over time based on project schedule
  - “Interviews” conducted only as needed

• Early project notification of Corrective Actions (CAs), resulted in early response to CAs

• Less impact to Process Group, balancing workload with appraisal activities
Approaches Leveraged for a Successful CMMI® Appraisal

• Project Selection
  - Real-time trade studies resulted in optimal organizational scope

• Continuous Class C Appraisal
  - Internal appraisal conducted over time, proven less intrusive

• **Artifact Collection Sampling**
  - **Sampling method implemented to minimize cost**

• Communication
  - Used Microsoft SharePoint® as a collaboration tool to greatly enhance communication

• Automation
  - Developed utilities to increase efficiency
Artifact Collection Sampling Approach

Artifact collection can be a costly and intrusive aspect of preparing for a CMMI® appraisal

- Artifacts were collected from all projects within the Organizational Unit to support continuous Class Cs and formal SCAMPI℠ B & A
- Strategy based on a sampling method
- Based on project classifications, artifacts were collected that
  - Fully support a Process Area (PA)
    or
  - Provided a limited number of key artifacts as an indication of PA compliance
- Continuously populated Practice Implementation Indicator Data Base (PIIDB)
  - Projects provided artifacts as they became available

Sampling approach combined with continuous Class C significantly reduced cost and effort
Artifact Collection Sampling Approach

<table>
<thead>
<tr>
<th>Process Area</th>
<th>Project 1</th>
<th>Project 2</th>
<th>Project 3</th>
<th>Project 4</th>
<th>Project 5</th>
<th>Project 6</th>
<th>Project 7</th>
<th>Project 8</th>
<th>Project 9</th>
<th>Project 10</th>
<th>Project 11</th>
<th>Project 12</th>
<th>Project 13</th>
</tr>
</thead>
<tbody>
<tr>
<td>PP</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>PMC</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>IPM</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>RSKM</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>CM</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>PPQA</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>REQM</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>RD</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>TS</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>PI</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Ver</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Val</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>SAM</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>DAR</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>M&amp;A</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

**Legend:**
- **Green**: Artifacts available to fully support PA
- **Blue**: PA selected as part of Organizational Scope
- **✓**: Collected key artifacts only
- **√**: PA is either not applicable or not yet

Supported Project Selection Trade Study

> 3 Instances of each PA

Production Project

Small Project
Artifact Collection Sampling Benefits

• Artifact sampling strategy minimized cost and ensured institutionalization
  - Collection included all projects in the organizational unit
  - Fewer artifacts collected; key artifacts vs. full PA coverage

• Supported monthly update of project selection trade study
  - Accommodated changes in organizational scope over time based on project availability, project scope change, funding, etc.

• Resulted in minimal disruption to the projects by reducing requests for additional artifacts as the organization scope changed
  - Less intrusive to projects/support groups
Approaches Leveraged for a Successful CMMI® Appraisal

• **Project Selection**
  - Real-time trade studies resulted in optimal organizational scope

• **Continuous Class C Appraisal**
  - Internal appraisal conducted over time, proven less intrusive

• **Artifact Collection Sampling**
  - Sampling method implemented to minimize cost

• **Communication**
  - *Used Microsoft SharePoint® as a collaboration tool to greatly enhance communication*

• **Automation**
  - Developed utilities to increase efficiency
Communication Approach

There is a need for quick, continuous and accurate communication between projects and appraisal preparation team

• Specific Microsoft SharePoint® collaboration features were customized to support appraisal preparation
  - Document libraries were used as a staging area to collect artifacts and capture status
  - Discussion boards were used to clarify artifact requests and other appraisal activities
  - Lists were used to coordinate project and process group tasking

• Historically, project communication occurred periodically primarily via e-mail which resulted in
  - Duplication of effort
  - Minimal sharing of information
  - Delayed access to status
Communication Approach – Appraisal Preparation Microsoft SharePoint® Site

This site is being created for evaluating/prototyping the use of SharePoint for the CMIE Appraisal activity. Once the evaluation activity has completed this sub-site will be deleted.

- Project 1 Artifact Library
- Project 2 Artifact Library
- Project 3 Artifact Library
- Project 4 Artifact Library
- Project 5 Artifact Library
- Project 6 Artifact Library
- Project 7 Artifact Library
- ORGANIZATION ARTIFACT LIBRARY
- Project/Org Artifac Shared Area
- Announcements
- Events
- Links
- Project/Org Tasks
- Training Compliance Matrix
- Appraisal Preparation Discussion Forum
- Artifacts Discussion Forum
- Corrective Action Plan Discussion Forum

Project Use: Artifact Delivery, Artifact & CAP burn down
Communication Approach - Appraisal Preparation Microsoft SharePoint® Site

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Announcements</td>
<td>- Time-independent information (e.g., change in appraisal team lead)</td>
</tr>
<tr>
<td>Events</td>
<td>- Time-dependent happenings (e.g., Functional Area Representative (FAR) session, opening brief)</td>
</tr>
<tr>
<td>Links</td>
<td>- Hyperlinks to useful information (e.g., CMMI®, Microsoft SharePoint® guide)</td>
</tr>
<tr>
<td>Project/Org Tasks</td>
<td>- e.g., Provide artifact, respond to Corrective Action Plan (CAP)</td>
</tr>
<tr>
<td>Training Compliance Matrix</td>
<td></td>
</tr>
<tr>
<td>Appraisal Preparation Discussion Forum</td>
<td></td>
</tr>
<tr>
<td>Artifacts Discussion Forum</td>
<td></td>
</tr>
<tr>
<td>Corrective Action Plan Discussion Forum</td>
<td>- Flow of communication between projects and the Enterprise Process Group</td>
</tr>
</tbody>
</table>
Communication Benefits

• The use of Microsoft SharePoint® as a collaboration tool greatly enhanced communication among projects, support groups and the appraisal preparation team

• Enabled projects to:
  - Continuously deposit artifacts in staging area
  - Respond to Corrective Actions (CA) requests
  - Ready access status (artifact and CA burn down) & compliance report
  - View PIIDBs (current artifact vs. pre-CA artifact)

• Resulted in:
  - Improved understanding of expectations
  - Less face to face meetings
  - Less Rework; “Bring me a rock”
Approaches Leveraged for a Successful CMMI® Appraisal

- **Project Selection**
  - Real-time trade studies resulted in optimal organizational scope

- **Continuous Class C Appraisal**
  - Internal appraisal conducted over time, proven less intrusive

- **Artifact Collection Sampling**
  - Sampling method implemented to minimize cost

- **Communication**
  - Used Microsoft SharePoint® as a collaboration tool to greatly enhance communication

- **Automation**
  - Developed utilities to increase efficiency
Automation Approach

Projects Provide Artifacts → Project’s Microsoft SharePoint® Directory → PIIDB (Limited Access) → Artifacts → Appraisal Tool → Artifacts → CMMI Compliance Artifact and CA Burn Down → Reports → Artifacts Assessed
Automation Approach

Manual approach proven ineffective and resulted in significant errors

- **Automated the movement of artifacts**
  - From projects Microsoft SharePoint® site (via librarian notification)
  - To the Practice Implementation Indicator Data Base (PIIDB) (limited access)
  - Linked to the appraisal tool (created load file for appraisal tool)

- **Automated status reporting**
  - Detailed progress reports to monitor performance and efficiency of appraisal preparation activities
  - CMMI® Compliance Reports (Red Yellow Green)
  - Artifact delivery and corrective action burn down status
## Automated Approach - Status Reporting

### Model Coverage - Level 2 Process Areas

<table>
<thead>
<tr>
<th>Process Areas</th>
<th>Org</th>
<th>Project 1</th>
<th>Project 2</th>
<th>Project 3</th>
<th>Project 4</th>
<th>Project 5</th>
<th>Project 6</th>
<th>Project 7</th>
<th>Project 8</th>
<th>Org</th>
</tr>
</thead>
<tbody>
<tr>
<td>REQM</td>
<td></td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>PP</td>
<td></td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>PMC</td>
<td></td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>SAM</td>
<td></td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>M&amp;A</td>
<td></td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>PPQA</td>
<td></td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>CM</td>
<td></td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>RD</td>
<td></td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>TS</td>
<td></td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>PI</td>
<td></td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>VER</td>
<td></td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>VAL</td>
<td></td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>IPPD</td>
<td></td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>RSKM</td>
<td></td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>DAR</td>
<td></td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>OPF</td>
<td></td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>OPD</td>
<td></td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>OT</td>
<td></td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
</tbody>
</table>

### Model Coverage - Level 3 Process Areas

<table>
<thead>
<tr>
<th>Process Areas</th>
<th>Org</th>
<th>Project 1</th>
<th>Project 2</th>
<th>Project 3</th>
<th>Project 4</th>
<th>Project 5</th>
<th>Project 6</th>
<th>Project 7</th>
<th>Project 8</th>
<th>Org</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>94%</td>
<td>94%</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td></td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>6%</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>R</td>
<td></td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>NY</td>
<td></td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
</tbody>
</table>

### Project Coverage - Level 3 Process Areas

<table>
<thead>
<tr>
<th>Project</th>
<th>Org</th>
<th>Project 1</th>
<th>Project 2</th>
<th>Project 3</th>
<th>Project 4</th>
<th>Project 5</th>
<th>Project 6</th>
<th>Project 7</th>
<th>Project 8</th>
<th>Org</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>89%</td>
<td>96%</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td></td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>6%</td>
<td>4%</td>
<td></td>
</tr>
<tr>
<td>R</td>
<td></td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>NY</td>
<td></td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
</tbody>
</table>

### Overall Coverage

<table>
<thead>
<tr>
<th>Process Areas</th>
<th>Org</th>
<th>Project 1</th>
<th>Project 2</th>
<th>Project 3</th>
<th>Project 4</th>
<th>Project 5</th>
<th>Project 6</th>
<th>Project 7</th>
<th>Project 8</th>
<th>Org</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>94%</td>
<td>96%</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td></td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>6%</td>
<td>4%</td>
<td></td>
</tr>
<tr>
<td>R</td>
<td></td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>NY</td>
<td></td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
</tbody>
</table>
Automation Benefits

- No lost data
- Significant reduction of effort (moving artifacts, creating reports)
- Continuous (vs. stagnant or periodic) status and compliance reports
- Easy to change links to PIIDB (load file) when organizational scope changes
- Feedback from projects very positive

Other BAE Systems sites using this automation have also achieved success
Summary

• Project Selection
  - Plan for project availability to support the appraisal to change

• Continuous Class C Appraisal
  - Adopt an approach that results in maintenance of PIIDB

• Artifact Collection Sampling
  - Take advantage of sampling to broaden the organizational coverage

• Communication
  - Avoid “Bring me a rock” syndrome

• Automation
  - Automate, Automate, Automate!
Questions
Contact Information

Lisa Ming
Enterprise Process Group

BAE Systems Electronics, Intelligence and Support

Tel: (603) 885 5562
Email: lisa.ming@baesystems.com