

# CMMI Fuels Your Tiger Team

Andy Cordes  
ABB Inc.  
US Corporate Research  
Center





**CMMI Technology Conference and User Group**

November 17-20, 2008  
Hyatt Regency Tech Center, Denver CO



# Perform a Tiger Team Review? How?

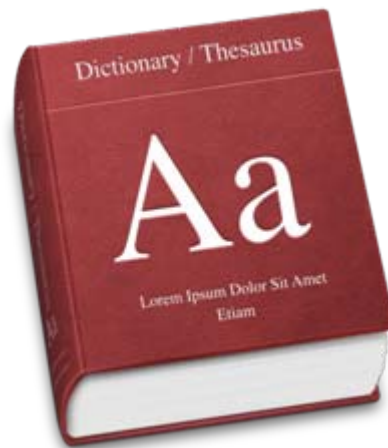
- ABB Software Process Initiative (ASPI) 
  - Geographically distributed team driving CMMI-based process improvement throughout ABB
  - Substantial experience performing Class B and C appraisals
- High level management requests ASPI to perform a “Tiger Team Review” on a project “in trouble” 
- How?
- Fall back to CMMI and the SCAMPI Method (ISO/IEC 15504)!
- Presentation describes ABB’s experience in adapting SCAMPI for Tiger Team reviews and using CMMI as a way of structuring the review scope

# CMMI/SCAMPI Fuels Your Tiger Team

- Tiger Team Definition
- SCAMPI Appraisal vs. Tiger Team Review
- Using CMMI in a Tiger Team Review
- Tiger Team Results as Process Improvement Catalyst
- Summary

# Definition of Tiger Team (Wikipedia)

- Any official inspection team or special "fire fighting" group called in to look at a problem from outside the box
- A team set up solely in response to a specific situation or problem, without considering any wider or longer-term issues. The team typically operates (at least partially) outside the normal chain of command, and reports directly to a higher company officer



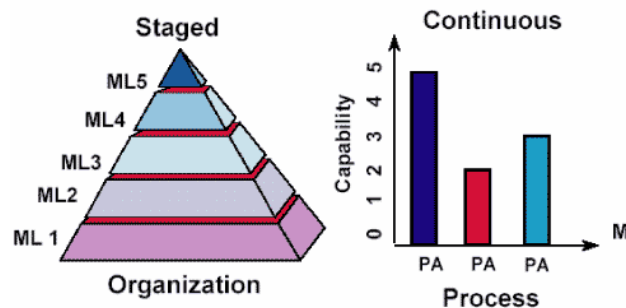
# Typical Tiger Team Situations

- A key project is running behind schedule/over cost with little visibility into the root causes for the delay
- A high level management review questions whether a product under development will meet end customer needs
- Management requests:
  - an objective view into whether the remaining tasks on a project can be completed according to the current project plan
  - the identification of associated risks to successful project completion



# Typical SCAMPI Appraisal Situations

- An organization wants to improve its ability to repeatably complete projects on time, within budget, and with the right content. SCAMPI is used to understand the gaps between the organization's practices and the CMMI "best practices"
- An organization wants to measure their progress in achieving the goals of a process improvement program
- An organization's practices are "audited" during a proposal evaluation phase

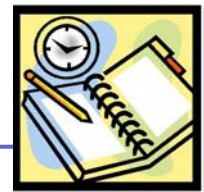


# Key Differences

<b>SCAMPI</b>	<b>Tiger Team Review</b>
<ul style="list-style-type: none"><li>■ Motivated by desire to improve</li><li>■ Appraisal used as a diagnostic tool to identify areas of improvement</li><li>■ Typically associated with multiple projects</li><li>■ Appraisal scope defined in terms of CMMI process areas</li><li>■ Appraisal results present findings in terms of strengths and weaknesses</li></ul>	<ul style="list-style-type: none"><li>■ Motivated by risk in an existing project</li><li>■ Review used to shed light on the root causes of project difficulties</li><li>■ Specific to one project</li><li>■ Review scope defined in terms of Steering Committee concerns with project risks<ul style="list-style-type: none"><li>■ Includes focus areas outside of CMMI process areas (e.g., product architecture extensibility, customer satisfaction, etc.)</li><li>■ CMMI can be used “undercover” to structure the objective evidence gathering activities</li></ul></li><li>■ Review results include not only strength and weakness findings but also conclusions and recommendations</li></ul>



# Plan and Prepare (1)



SCAMPI	Tiger Team Review
<p><b>Analyze Requirements</b></p> <ul style="list-style-type: none"> <li>■ Meet or correspond with the appraisal sponsor</li> <li>■ Determine appraisal objectives, constraints, and scope</li> <li>■ Document and maintain the appraisal input</li> <li>■ Obtain sponsor commitment to the appraisal input</li> </ul>	<ul style="list-style-type: none"> <li>■ Tiger team leader meets with the review sponsor (Steering Committee) to understand the needs and reasons for calling the review</li> <li>■ The organizational scope (entire project or subproject) of the review is set</li> <li>■ Review constraints are identified (schedule, availability of resources, etc.)</li> <li>■ Confidentiality/non-attribution discussed</li> <li>■ <b>No reference models are explicitly discussed</b></li> <li>■ Documentation of review input is included in the review plan (next step)</li> <li>■ Sponsor approval is obtained on the review plan (next step)</li> </ul>

■ Similar to SCAMPI  
■ Different from SCAMPI



# Plan and Prepare (2)



SCAMPI	Tiger Team Review
<p><b>Develop Appraisal Plan</b></p> <ul style="list-style-type: none"> <li>■ Tailor the method</li> <li>■ Identify resources</li> <li>■ Determine cost and schedule</li> <li>■ Plan and manage logistics</li> <li>■ Document and manage risks</li> <li>■ Obtain commitment to the appraisal plan</li> </ul>	<ul style="list-style-type: none"> <li>■ Tiger team leader documents the plan using a tailored version of the appraisal plan template, including:                             <ul style="list-style-type: none"> <li>■ the review input</li> <li>■ roles and responsibilities</li> <li>■ activities to be performed</li> <li>■ resources required</li> <li>■ detailed review schedule</li> <li>■ review logistics</li> <li>■ risks and mitigations</li> </ul> </li> <li>■ Review team members, Steering Committee members, and Site Manager approve the plan</li> </ul>
<p><b>Select and Prepare Team</b></p> <ul style="list-style-type: none"> <li>■ Identify appraisal team leader and select team members</li> <li>■ Prepare team</li> </ul>	<ul style="list-style-type: none"> <li>■ Teams consists of at least 3 members chosen to align with the review objectives</li> <li>■ Team leader responsible for ensuring that team members are prepared for the review</li> </ul>

■ Similar to SCAMPI  
■ Different from SCAMPI



# Plan and Prepare (3)



SCAMPI	Tiger Team Review
<p><b>Obtain and Inventory Initial Objective Evidence</b></p> <ul style="list-style-type: none"> <li>■ Obtain an initial set of objective evidence</li> <li>■ Inventory the objective evidence</li> </ul>	<ul style="list-style-type: none"> <li>■ Interviews with key participants are conducted</li> <li>■ Initial document reviews are performed</li> <li>■ Informal list of documents received is kept</li> </ul>
<p><b>Prepare for Appraisal Conduct</b></p> <ul style="list-style-type: none"> <li>■ Plan for the collection of objective evidence</li> <li>■ Perform one or more readiness reviews to evaluate the plan for the appraisal</li> <li>■ Revise the plan as needed</li> </ul>	<ul style="list-style-type: none"> <li>■ Schedule in the review plan and the inventory record of data received identify the plan for data collection</li> <li>■ The schedule in the review plan is reviewed and updated regularly until the review start date</li> </ul>

■ Similar to SCAMPI  
■ Different from SCAMPI

# Conduct (1)



SCAMPI	Tiger Team Review
<p><b>Prepare Participants</b></p> <ul style="list-style-type: none"><li>■ Ensure that the appraisal participants understand the purpose of the appraisal and are prepared to participate</li></ul>	<ul style="list-style-type: none"><li>■ The on-site review coordinator or Site Manager announces the project review and ensures that all participants (identified in the review plan) are informed</li><li>■ Participant briefing is held on the first day of the review</li></ul>
<p><b>Examine Objective Evidence</b></p> <ul style="list-style-type: none"><li>■ Seek and review information and artifacts according to the plan for data collection</li></ul>	<ul style="list-style-type: none"><li>■ Interviews and document reviews are performed</li></ul>

- Similar to SCAMPI
- Different from SCAMPI

# Conduct (2)



<b>SCAMPI</b>	<b>Tiger Team Review</b>
<p><b>Document Objective Evidence</b></p> <ul style="list-style-type: none"><li>■ Take, review, and tag notes to indicate the portion of CMMI and the organizational unit to which the information applies</li><li>■ Record the presence and absence of objective evidence</li><li>■ Consolidate notes and document practice implementation, as well as strengths and weaknesses</li><li>■ Inventory the reviewed objective evidence; identify the information yet to be collected and the remaining set of activities to gather the information</li></ul>	<ul style="list-style-type: none"><li>■ Team members take notes, and identify how the work products and interview affirmations pertain to the scope of the project review</li><li>■ Following completion of the interview, team members individually tag their notes against review scope focus areas</li><li>■ The review team reviews the evidence obtained so far, and makes adjustments to ensure that the remaining activities capture the missing or insufficient information</li></ul>

- Similar to SCAMPI
- Different from SCAMPI

# Conduct (3)



SCAMPI	Tiger Team Review
<p><b>Verify Objective Evidence</b></p> <ul style="list-style-type: none"> <li>Review objective evidence to verify interdependencies, accuracy, data sources, non-attribution, model relevance, consistency, corroboration, and actual implementation</li> </ul>	<ul style="list-style-type: none"> <li>Following completion of interviews and document reviews, the review team works together to generate and consolidate findings from the objective evidence</li> <li>Verification focuses on accuracy, consistency, and corroboration and is performed informally</li> </ul>
<p><b>Validate Preliminary Findings</b></p> <ul style="list-style-type: none"> <li>Generate preliminary findings presentation describing the weaknesses verified, present it to appraisal stakeholders for validation, and consider the resulting feedback in revising the outputs</li> </ul>	<ul style="list-style-type: none"> <li>Statements of strengths and weaknesses are documented (Preliminary Review Presentation), and presented to the Site Manager (and management team if the sponsor wishes)</li> <li>Feedback is incorporated</li> </ul>

■ Similar to SCAMPI  
■ Different from SCAMPI

# Conduct (4)



SCAMPI	Tiger Team Review
<p><b>Generate Appraisal Results</b></p> <ul style="list-style-type: none"> <li>■ Document statements of strengths, weaknesses, or other written expressions of appraisal outcome</li> <li>■ Document detailed model scope of the appraisal to be reported</li> <li>■ Document characterizations (as appropriate) for each model component in the scope of the appraisal</li> </ul>	<ul style="list-style-type: none"> <li>■ Final Review Presentation is prepared from the Preliminary Review Presentation</li> <li>■ Conclusions - interpretations of the findings by the review team are documented                             <ul style="list-style-type: none"> <li>■ “The project will not meet its delivery milestone”</li> <li>■ “Critical design changes were not preceded by sufficient analysis”</li> <li>■ “The current system architecture will not support the planned product updates”</li> </ul> </li> <li>■ Recommendations/Paths Forward - suggested actions from the review team are documented                             <ul style="list-style-type: none"> <li>■ “Conduct a workshop to review the architecture and design of x product”</li> <li>■ “Provide focused training on y technology”</li> <li>■ “Introduce a more robust configuration management system”</li> </ul> </li> </ul>

■ Similar to SCAMPI  
■ Different from SCAMPI

# Report Results



SCAMPI	Tiger Team Review
<p><b>Deliver Appraisal Results</b></p> <ul style="list-style-type: none"> <li>■ Present, deliver, or otherwise transmit designated appraisal results to the stakeholders identified in the appraisal plan</li> <li>■ Reinforce, through written and/or oral communication, the provisions in place for confidentiality of the appraisal results</li> </ul>	<ul style="list-style-type: none"> <li>■ <b>Three results presentations are delivered:</b> <ul style="list-style-type: none"> <li>■ Preliminary Review Presentation - given to Site Manager</li> <li>■ Final Review Presentation without Conclusions and Recommendations - given to on-site stakeholders (attendees defined by Site Manager - typically, all review participants)</li> <li>■ Final Review Presentation with Conclusions and Recommendations - given to the review sponsors (Steering Committee)</li> </ul> </li> <li>■ Confidentiality of appraisal results is emphasized</li> </ul>
<p><b>Package and Archive Appraisal Assets</b></p> <ul style="list-style-type: none"> <li>■ Assemble the appraisal record for the appraisal sponsor</li> <li>■ Assemble the data package to submit to the CMMI Steward</li> </ul>	<ul style="list-style-type: none"> <li>■ Appraisal results physically delivered to the review sponsor (Steering Committee)</li> </ul>

■ Similar to SCAMPI  
■ Different from SCAMPI



# CMMI “Undercover”

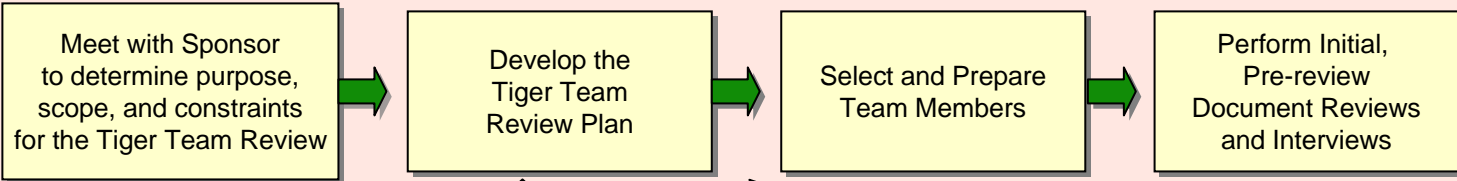
- Many of the project issues/risks being investigated by a Tiger Team can be related to CMMI Process Areas. For example:
  - **Issue/Risk:** System testing phase is finding a large number of defects
  - **CMMI PAs to investigate:** VER, REQM, CM
  - **Issue/Risk:** Customer is not satisfied with beta product release
  - **CMMI/PAs to investigate:** RD, VAL, VER
- Once the pertinent CMMI PAs are identified, they can be used to drive the execution of the tiger team review
  - Identifying individuals to interview
  - Suggesting documents to review
  - Constructing a set of interview questions
  - Organizing findings and review presentations



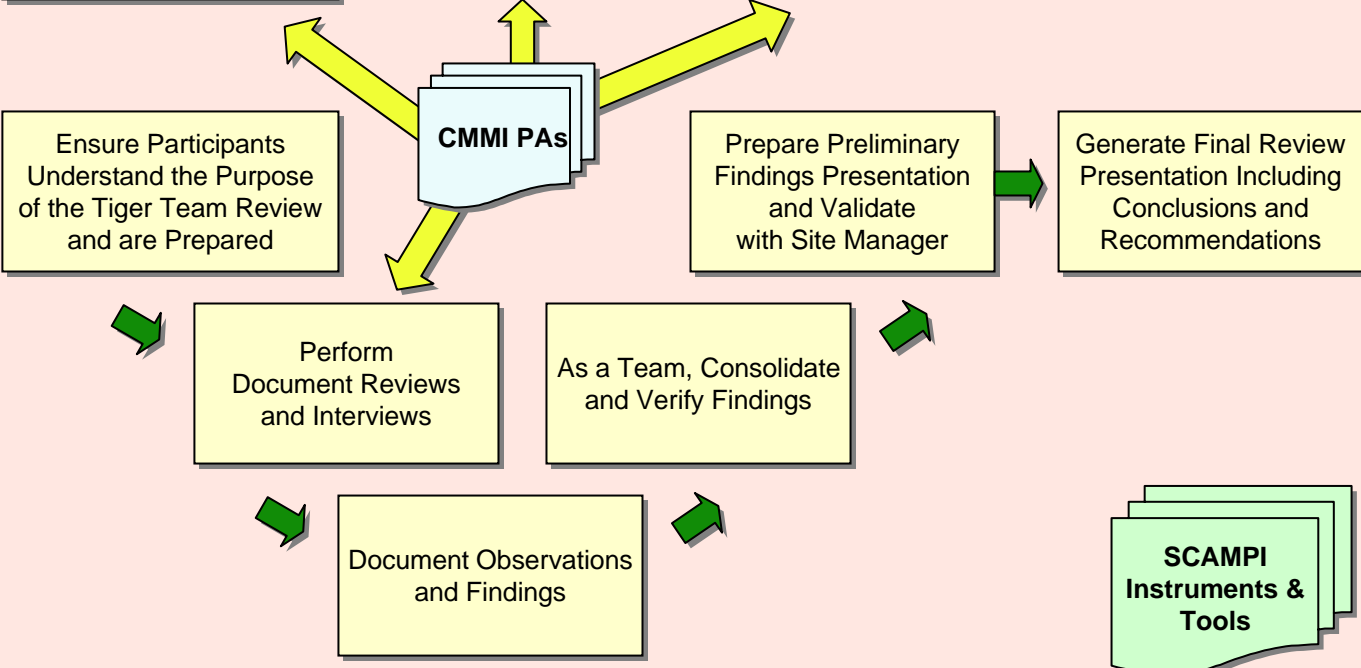


# CMMI and SCAMPI in Tiger Team Reviews

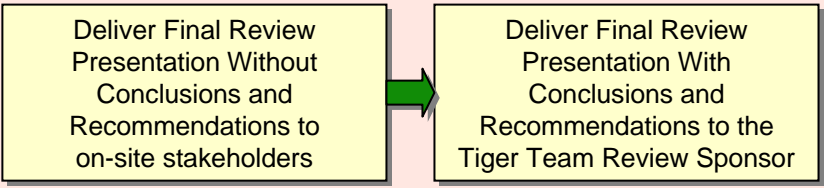
## Plan and Prepare



## Conduct



## Report Results



**SCAMPI Method**

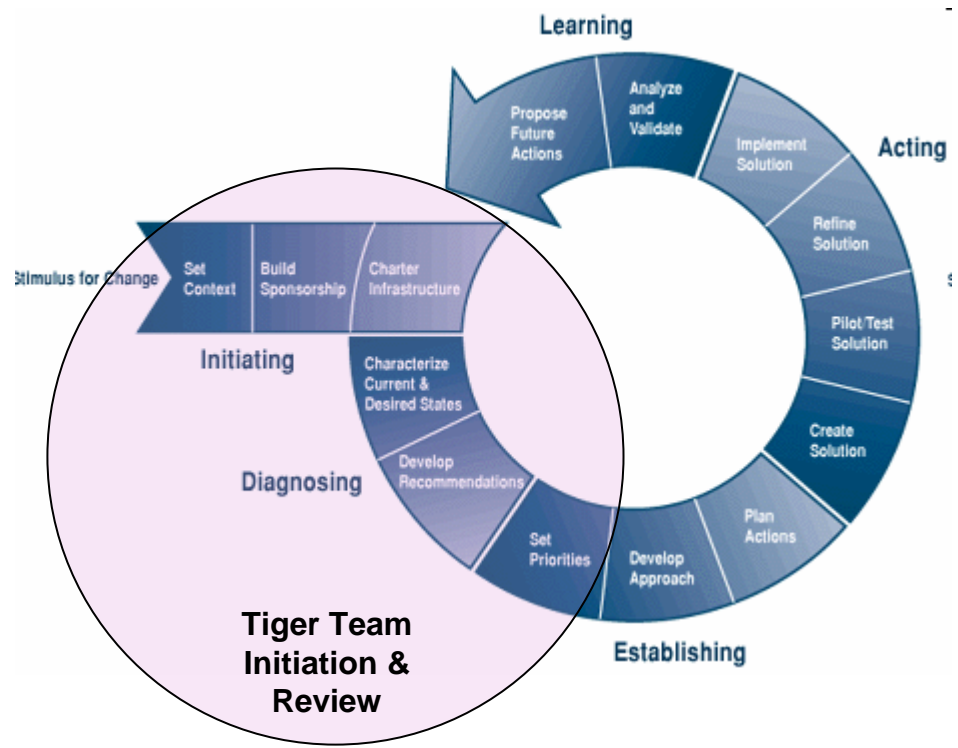
# Tiger Team Results as PI Catalyst

- In many organizations, a tiger team review is the first time a project's or organization's processes have been scrutinized
- Tiger team reviews are only called for projects that the company considers "important" and "valuable" - management is committed and sponsorship for making improvements is usually strong
- Tiger Team Review - disguised version of a tailored SCAMPI appraisal



# Tiger Team Results as PI Catalyst

- Results of tiger team reviews may lead to more thorough, fully CMMI-based appraisals and IDEAL-driven process improvement programs



# Conclusion

- Appraisal methods based on ISO/IEC 15504 (like SCAMPI) are effective for tiger team reviews
- CMMI helps to define the scope and structure of tiger team reviews
- Performing Tiger team reviews with CMMI/SCAMPI at the foundation may trigger the initiation of CMMI-based process improvement cycles



# Contact Information

**Andy Cordes**

Industrial Software Systems  
Department Manager

**ABB US Corporate Research Center**

940 Main Campus Drive  
Raleigh, NC 27606  
919-856-3871  
andrew.cordes@us.abb.com





Power and productivity  
for a better world™