Using Self-Assessments as Part of a CMMI® Improvement Strategy

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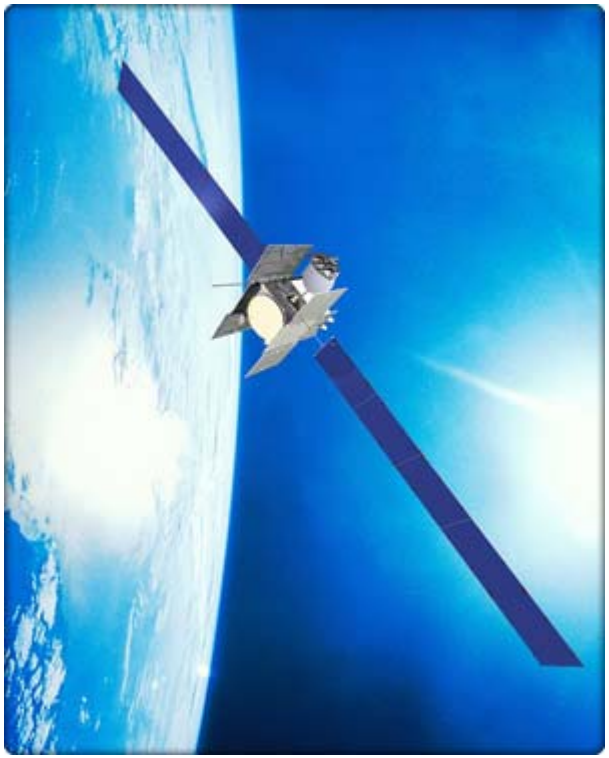
Background

Organizations need a cost effective mechanism to baseline process capability, identify opportunities for improvement and prepare for a CMMI® rating. A Self-Assessment can help meet this need by translating CMMI® into the specific language of a particular organization. The pros and cons of using a Self-Assessment should be evaluated as part of any CMMI® process improvement initiative. Factors such as cost savings, comprehensiveness and quality of the Self-Assessments all need to be considered. Integrating these parameters to determine the optimal strategy helps an organization develop an improvement plan to operate at the desired CMMI® level.

Topics

- Appraisal validity period
- The problem
- The Self-Assessment solution – Pros and Cons
- How to develop a Self-Assessment
- How to give a Self-Assessment
- What to do with the results

Boeing Space and Intelligence Systems

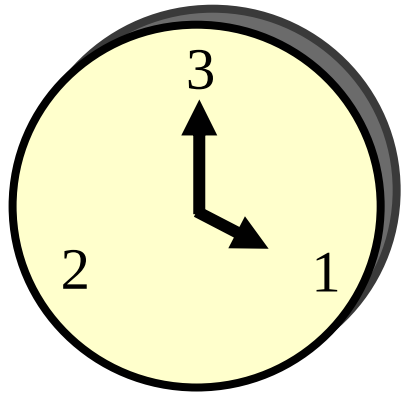


- **Boeing Space and Intelligence Systems (S&IS), headquartered in Seal Beach, Calif., is the company's center for satellites and experimental space systems. S&IS is a world leader in the design, development and manufacturing of satellites for government, civil and commercial customers. The division includes Boeing Satellite Systems International, Inc.**

CMMI® Core Team located in El Segundo, Southern California

Appraisal Validity Period

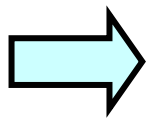
- **Carnegie Mellon Software Engineering Institute (SEI)** has defined a 3 year CMMI® Appraisal Validity Period
  - CMMI® V1.2 appraisal results are valid for a maximum of 3 years from the date of the Appraisal Disclosure Statement (ADS)
  - V1.1 appraisals expired on August 31, 2007 or 3 years after the date an appraisal was conducted, whichever is later



The Problem

- **Organizations need an easy, cost effective mechanism to help**
  - Identify CMMI® gaps
  - Baseline current process capability
  - Monitor / expand process capability
  - Identify opportunities for improvement
  - Prepare for an external CMMI® rating

SCAMPI* C, SCAMPI B, SCAMPI A



*Standard CMMI® Appraisal Method for Process Improvement (*SCAMPI*)

Self-Assessment Solution

- **A Self-Assessment consists of a set of Goal Questions and Standard Document / Record Questions used to perform CMMI® gap analysis**
  - Goal Questions set the stage
  - Standard Documents / Records are asked for to determine if specific artifacts have / will be created, or if specific processes exists
- **Teams answer "Yes" they have the asked for artifact (process) or "No" they don't have the artifact (process)**
  - If the team has the artifact (process), they identify the name

Example

	ACTIVITIES FOR MANAGING REQUIREMENTS							
	Are requirements managed, and are stakeholders COMMITTED to the requirements and the associated plans? Are inconsistencies between requirements and related documents / work products identified?							
	Standard document / records	HW #1	SE	SUB SYS1	Grnd	SW #1	Comments for all "Y" Responses	Standard Process Outputs
REQM SP 1.1	Criteria for evaluating completeness and acceptance of requirements	N	N	N	N	N		BPI-xxx, GUIDE-xxx
REQM SP 1.2	Specification documents are committed to by all stakeholders, and are being kept current / maintained.	N	N	N	N	N		Signed-Off Spec

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Feasibility

- **The feasibility of using a Self-Assessment should be evaluated**

- **Feasibility factors include:**
  - Ease of use
  - Cost savings
  - Comprehensiveness
  - Quality of the Self-Assessments

PRO – Benefits of Using a Self-Assessment

- **Translates CMMI® terminology into the specific language of a particular organization**
- **Maintains objectivity by focusing on Standard Documents / Records that the project or organization has created or established**
- **Low cost: 8-10 hours (Levels 2 & 3)**
  - Eliminates high cost, non-valued added tasks (e.g. data gathering)
- **Structured way to do CMMI® gap analysis**
- **Can be used to develop strategic improvement plans and to prepare for an external rating**

CON – Potential Problems with Self-Assessment Approach

- **Oversimplification or misinterpretation of model**
  - Could miss part of the model
- **Requires mentoring by internal CMMI® expert to interpret questions and help with artifact identification**
- **Need to ensure that questions are aligned with external lead appraiser expectations**

Getting Started

- **Establish a team to develop the Self-Assessment**

- **Team should be experienced with:**
  - CMMI® appraisals
  - Org / Project Concept of Operations
  - Org processes and work products
  - Org / Project weaknesses

Development Guidelines

- **Follow the structure of CMMI®**
  - Process Areas
  - Goals
  - Specific Practices (SPs)
  - Generic Practices (GPs)

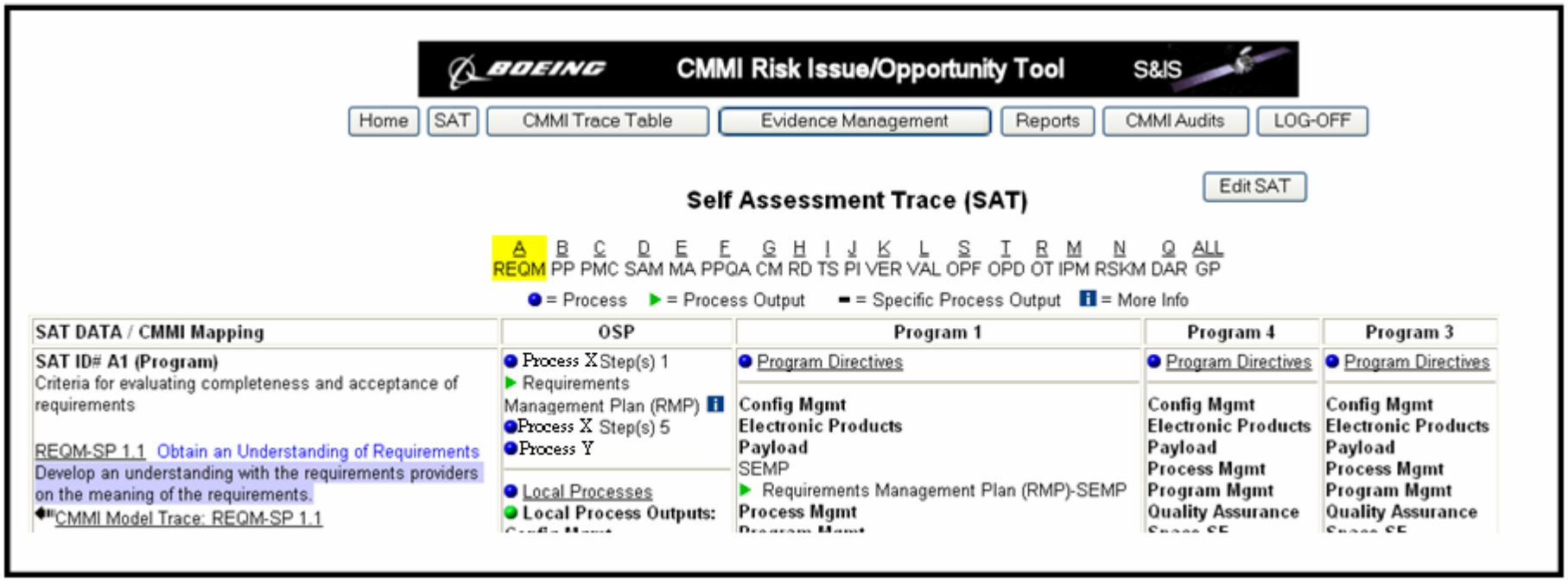
- **Questions should map directly to the model**
- **Questions should ask for objective evidence (artifacts) and processes**
- **Cover project and organization questions (validate organization / project interface)**

Development Building Blocks

- **Self-Assessment should be based on:**
  - Objective evidence/artifacts that are recognized by the team being assessed
  - Organization Concept of Operations
    - Organization vision
    - Organization improvement plan
  - Org standard processes and associated plans, data, reports
  - Tailoring guidelines
  - Lean principles of simplification and artifact reuse across specific and generic practices

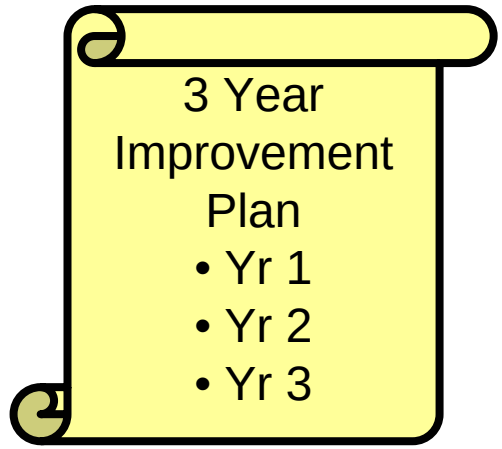
Tools

- **Simple spreadsheet works**
- **Web-based tools can help with data population and analysis**



Strategic Deployment Plan

- **Develop a 3 year plan to coincide with appraisal validity periods**
- **Determine scope**
  - Programs / projects / products
  - Organizations
- **Use criteria similar to SCAMPI project selection criteria:**
  - Key product lines
  - Percent of population
  - Phase of lifecycle



Self-Assessment Participation

- **Participants should commit to 3 sessions (2-3 Hrs each)**
- **Management should attend the first session**
- **Management should reevaluate personnel selection after the first session**
  - Don’t want to have to modify results later
  - Does team know the answers?

How to Conduct a Self-Assessment

- **6 people max**
  - Larger teams are unwieldy
- **Participants should provide Y/N answers**
  - Provide short name or description of artifacts for yes answers
- **A knowledgeable CMMI® expert/mentor should assist the interviewees in interpreting the questions**

Establishing Clarifying Terms

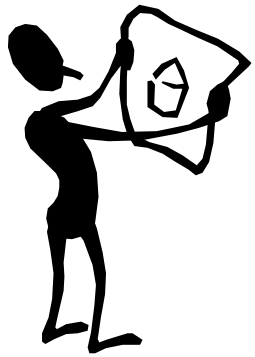
- **Institutionalization**
- **Organization Standard Processes**
- **Tailoring**
- **Process Owner**
- **Process Assets**
- **Work Product**
- **Performance Data**

Evaluating Results

- **Analyze / consolidate / graph results by process area / project / organization**
- **Compare Self-Assessment results to goals**

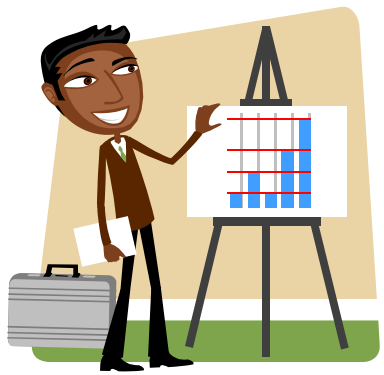
Development of Gap Closure Plan

- **Components of closure plans**
  - Gaps / Scope / Who (project, organization) / Effort / Dates



- **Integrated / common solutions where possible**

- **Tracking the gap closure plan will help you know when you are ready for a SCAMPI**



Summary

- **Self-assessment provides value**
  - Low cost
  - Focuses on improvements, rather than “gold” star
  - Can be used to help prepare for a SCAMPI