

Finding CMMI Compliant Artifacts and A Needle In A Haystack

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You Are Tasked To Find CMMI Compliant Data For An Upcoming Appraisal

- You meet with some program leads who show you the program server and where their documents are
- You start with Project Planning (PP) and Project Monitoring and Control (PMC)
 - You begin to locate documents for the each of the process areas
 - You create a matrix and populate the matrix with documents for each of the process areas
 - You cannot find data for some practices, so you question the leads
 - PP GP 2.10, Review the activities, status, and results of the project planning process with higher level management and resolve issues
 - The program manager is not available, however the leads provide you with program reviews

You Continue To Collect Artifacts

- - Some examples of your data collection activities:
 - For PP, SP 2.7 Establish and maintain the overall project plan content:
 - You provide the program management, systems, software, risk, and quality plans.
 - For PMC, SP 1.1 Monitor the actual values of the project planning parameters against the project plan:
 - You look at the examples suggested in the model's sub-practices and you provide the program schedule and a schedule of resources
 - For PMC, SP 1.3 Monitor risks against those identified in the project plan:
 - You provide a list of hardware and software risks
 - For PMC, SP 1.6 Periodically review the projects progress, performance, and issues:
 - You provide a design review

You Completed Data Collection And Are Ready For The Appraisal

- You feel good about what you have done and expect to get favorable results from the upcoming appraisal
- Collecting data was a lot of work but you felt it was not difficult

The Appraisal Results Are Not Favorable

- There are many observations from the appraisers
 - For PP, SP 2.7 Establish and maintain the overall project plan content:
 - You provided the program management, systems, software, risk, and quality plans
 - » Some plans are not signed
 - » There is no evidence of “maintain” as all plans are a Rev (-)
 - For PMC, SP 1.1 Monitor the actual values of the project planning parameters against the project plan:
 - You provided the program schedule and a schedule of resources
 - » The schedules are not updated nor show actuals
 - For PMC, SP 1.3 Monitor risks against those identified in the project plan:
 - You provided a list of hardware and software risks
 - » The risks are not the same ones shown in the program’s risk register
 - For PMC, SP 1.6 Periodically review the projects progress, performance, and issues:
 - You provided a design review
 - » It is not applicable here. Move it to SP 1.7, Review the accomplishments and results of the project at selected project milestones. Provide other program or team reviews, not milestone reviews

More Observations From The Appraisers

- Plans are not direct evidence unless shown in Project Planning
- List of action items does not describe the closure activity
- Reviews with higher level management do not show line management attended
- GP 2.5 Train the People: the training records of the people shown are not the same as the org charts (GP 2.4) or charge numbers people used in providing resources (GP 2.3)
- ISO audit does not show evidence of objective evaluation because it does not include many of the sub-practices of the subject process area
- Little systems engineering evidence was provided for at least one program
- Data is “old”
- The SAM process appears to have stopped two years ago

Fallout From The Appraisal

- You are now convinced that finding CMMI compliant data is like finding a needle in a haystack!
 - As a matter of fact, it is more like finding a needle in Field of Hay!



Sorting Out The Needle From The Hay

- Prior to an appraisal understand what is expected from the appraisal team and what you expect
 - What constitutes “enough” artifacts
 - Two directs and two indirects (per practice, sub-practice, discipline, etc.)
 - What constitutes compliancy to the model
 - Meet the intent of the goal
 - Provide evidence for all practices
 - Provide evidence for all sub-practices
 - Educate the appraisal team on how your business / organization operates
 - Provide overviews from each appraisal program and your organization
 - Size, life cycle, what is being built and how and by whom (disciplines), etc.
 - Communicate your goals
 - Need help to improve a certain business organization, discipline, etc.

Sorting Out The Needle From The Hay (Cont'd)

- Define terms for data collection guidance
 - “Goodness” – appraise plans for CMMI compliancy and do not judge the effectiveness of the plan
 - How “old” is “old?”
 - Understand “maintain” in “establish and maintain”
 - “Update” – changed plans, requirements, milestones, events
 - “Refresh” – recurring activities (meetings, monitor and control, etc.)

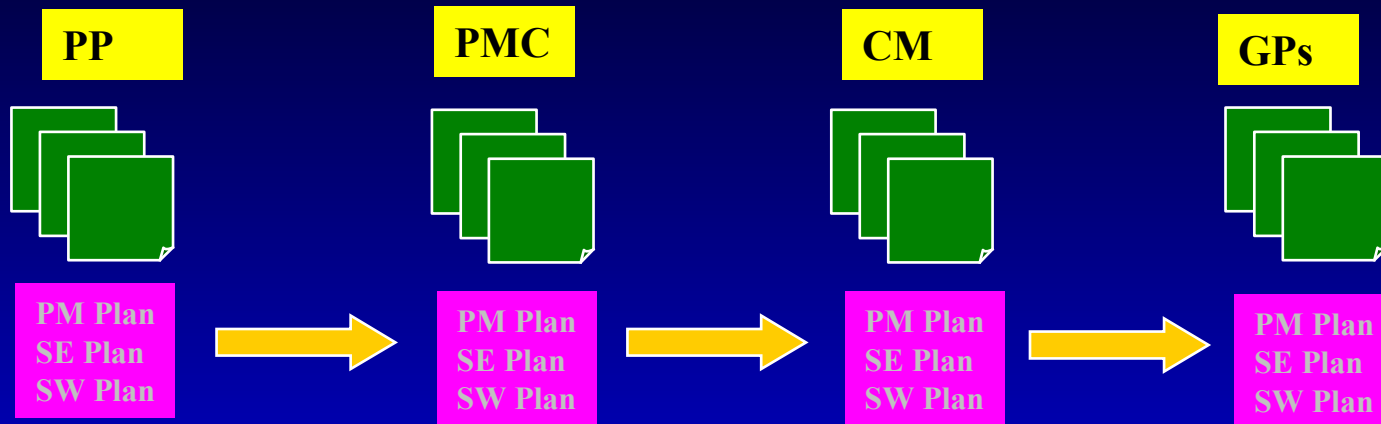
Sorting Out The Needle From The Hay (Cont'd)

- Know how the appraisal team will operate
 - Will credit be given for artifacts seen in prior practices but not provided in other practices where they also apply?
 - Will appraisers external to your organization ask appraisers from your organization to help clarify data issues?
 - Similarly, will appraisers ask for help from other appraisers to help clarify data issues from a discipline they are not familiar with?

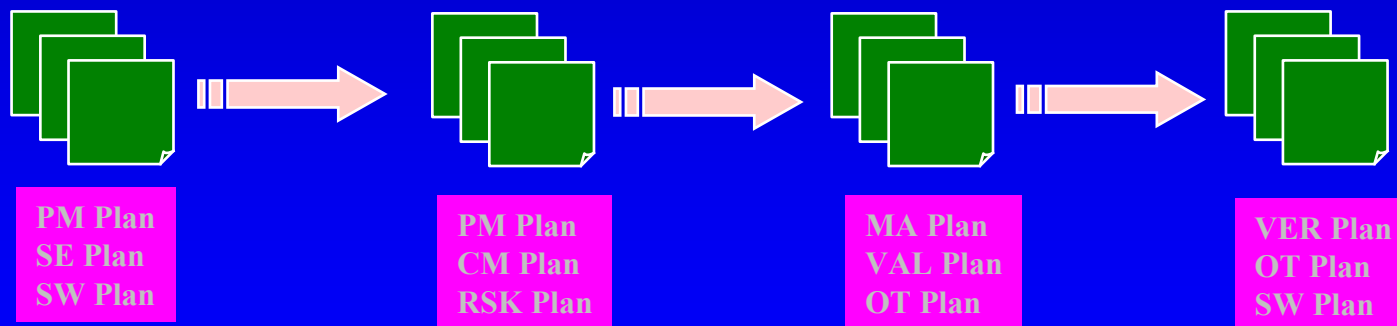
Sorting Out The Needle From The Hay (Cont'd)

- Describe how documents are organized for the appraisal
 - Spreadsheet, table, by discipline, etc.
 - Soft and / or hard copy of data
 - How classified, proprietary, etc. data will be provided
 - Data collection threads
 - Comments explaining why the data is relevant

Documentation Issues

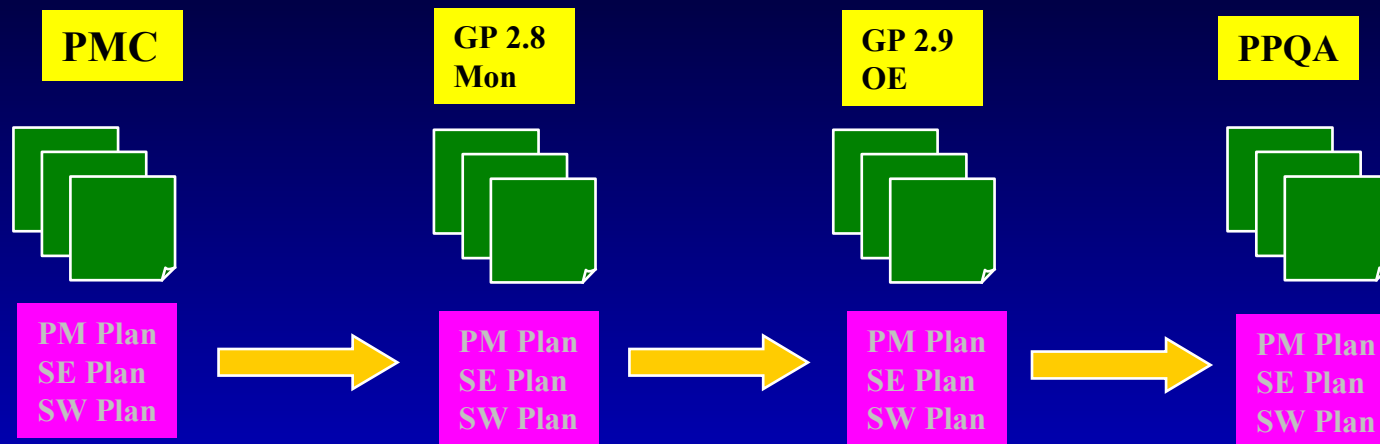


Using The Same Documents Leaves A Data Collection Trail)



Using A Mixture Of Documents Makes It More Difficult To Understand The Evidence

Documentation Issues



Some Issues/Considerations That Resulted From Appraisals:

- **PMC:** Monitor Effort, Cost, And Schedule Against The Plan
- **GP 2.8 (Monitor & Control):** Monitor & Control The Process Against The Plan
- **GP 2.9 (Objective Eval):** Process Is Implemented As Planned
- **PPQA, SP 2.1:** Can Be Little “q”; Not Necessarily Big “Q”
- **GP 2.10 (Higher Level Mgt):** Should Have Actual Presentations & Meeting Minutes
Attendee List, & Action Items
Higher Level Management Is Senior Management; Not Program Management
- **Documentation:** How Much Is Enough?
Two Directs & Two Indirects?
Need Directs & Indirects From PM, SE, & SW?
Are Plans Indirects?

Other Issues

- Implementing CMMI Based Process Improvements On Legacy Programs
 - Introduce Process Improvements As Legacy Programs Enter A Major Milestone
 - Tailor The Organization's Standard Process From That Point Forward
- Have A Senior Systems Engineer Or A Senior Software Engineer Be Responsible For Applicable Systems Engineering Activities On Predominantly Software Programs
- Time And Effort Trying To Produce Lessons Learned Artifacts For Every CMMI Process Area

Conclusions

- Manage appraisal preparation like you would a program
 - Assign responsibility, obtain commitment (organization, program, and process), generate a schedule, resolve issues, monitor progress, and report status
- Determine who should identify documents
 - Process engineers or program personnel
- Form a capable team
 - Process engineers with CMMI training
 - Process engineers who can verify that the collected documents are CMMI compliant
 - Communication between data verifiers and collectors to understand what is expected to satisfy the model
 - Reviews and meetings need minutes, action items, attendee lists
 - Data threads; the plans shown in PP should be the same in PMC
- Appraisal team

Summary

- Diverse Opinions Emerge On How To Define, Generate, And Implement CMMI Compliant Processes
 - Process Engineers, Appraisers, And Lead Appraisers Have Divergent Opinions On The Intent Of The Model And What Constitutes Compliancy
 - Detail And Architecture Of The Organization's Standard Process
 - Artifact Collection: Type And Number Of Documents
 - Scope, Meaning, And Application Of Generic Practices
 - Correlating An Organization's Daily Activities To CMMI Practices
- As A Result, At Times It Seems As If We Looking For A Needle In A Haystack