An Effective Process Improvement Plan – Key To Maintaining ML3

SEI Partner

Topics

Congratulations!

Your organization was appraised at Maturity Level 3!

In three years you will be appraised again:

- How much effort is it going to take to maintain your rating?
- Where will the resources come from?
- What are the critical tasks that need to be performed?

Are you planning to keep your maturity level 3 rating?

What do you have to work with?

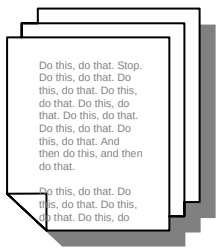
It may not be pretty – but you have 3 years to improve on it!

Your ML3 Organization as a System

Your mature organization is a system of systems:

People (social system): trained and assigned with responsibilities to operate and maintain the system

Technology: tools make it easier to operate the system. If people find activities too difficult they will not be done well



Processes: defined and available to guide activities and contribute to greater effectiveness, efficiency, and quality

For the organization "system" to remain viable, all three components must be maintained

Viewing Your OSSP as a System – 1

From a process improvement perspective, maintaining your maturity process system is similar to maintaining other systems:

- Process enhancements (improvements) and defect corrections are the requirements
- Updates to the Organization's Set of Standard Processes (OSSP) can be packaged as releases, a.k.a. product delivery projects
- Each release requires user training, documentation updates, and user support
- The effort needs to be planned, managed, CM'd, and QA'd.

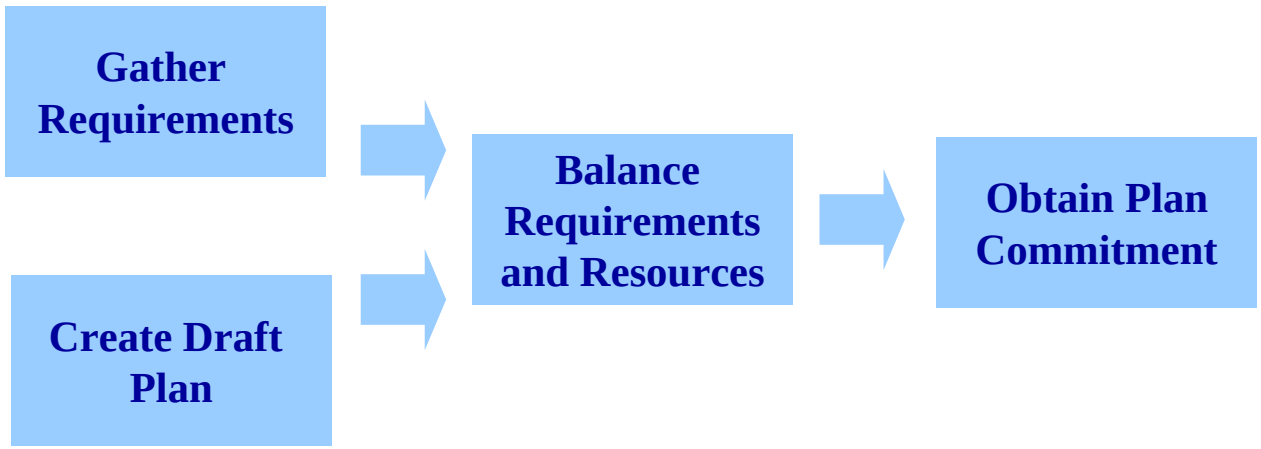
Viewing Your OSSP as a System – 2

Just like any system, your process system requires improvement, maintenance and sustainment. Why not manage the effort like any other project in your organization?

There are many reasons why that is *not* done:

- Some organizations prefer not to make process improvement expenditures highly visible
- Your PI Lead was probably chosen for their process improvement and CMMI experience, not their project management knowledge
- Your organization's project managers are too busy to help with non-core activities
- Viewing process as a system requires a large mental shift

Plan ML3 Maintenance Like a Project – 1

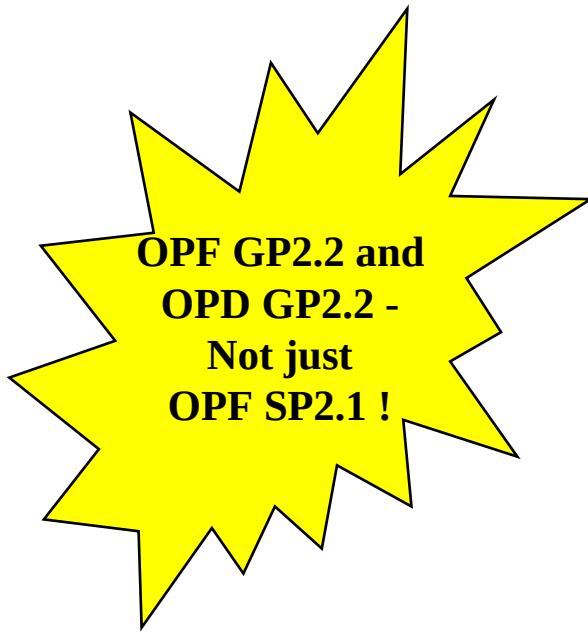


Process Improvement (PI) planning should coincide with your organization's financial year planning

Plan ML3 Maintenance Like a Project – 2

Process Improvement Project Plans contain:

- Requirements / Scope
- Life Cycle
- Work Breakdown Structure (WBS)
- Effort and Cost Estimates
- Schedule
- Risks
- Stakeholder Involvement Plan
- Supporting plans for Resource Management, Data Management, PPQA, Measurement and Training



Requirements Sources

Where do process requirements come from?

Sources	Process Requirements
User Input	Enhancements
Suggestions	Process defects
PPQA Analysis	
Measurement Analysis	
Appraisal Results	
Tailoring Analysis	
Business and PI Goals	
Policy Review	
Project Lessons Learned	

Requirements Sources

Where do process requirements come from?

Sources	Process Requirements
User Input	
Suggestions	
PPQA Analysis	Recurring non-compliance
Measurement Analysis	Audits with zero non-compliance
Appraisal Results	Non-compliance by project type
Tailoring Analysis	Increases in resolution time
Business and PI Goals	
Policy Review	
Project Lessons Learned	

Requirements Sources

Where do process requirements come from?

Sources	Process Requirements
User Input	
Suggestions	
PPQA Analysis	Unused measures
Measurement Analysis →	Changes to objectives/needs
Appraisal Results	Effort to collect exceeds value
Tailoring Analysis	New candidate org measures
Business and PI Goals	
Policy Review	
Project Lessons Learned	

Requirements Sources

Where do process requirements come from?

Sources	Process Requirements
User Input	
Suggestions	
PPQA Analysis	
Measurement Analysis	
Appraisal Results	Process weaknesses/gap
Tailoring Analysis	Reinforce process strengths
Business and PI Goals	
Policy Review	
Project Lessons Learned	

Requirements Sources

Where do process requirements come from?

Sources	Process Requirements
User Input	
Suggestions	
PPQA Analysis	
Measurement Analysis	
Appraisal Results	
Tailoring Analysis	Process tailoring trends
Business and PI Goals	Recurring milestone tailoring
Policy Review	Project contributions to assets
Project Lessons Learned	New life cycles identified

Requirements Sources

Where do process requirements come from?

Sources	Process Requirements
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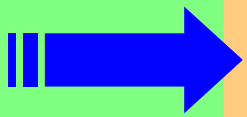
Suggestions	
PPQA Analysis	
Measurement Analysis	
Appraisal Results	
Tailoring Analysis	
Business and PI Goals	Support new business initiatives
Policy Review	Support organizational changes
Project Lessons Learned	



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Where do process requirements come from?

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User Input	
Suggestions	
PPQA Analysis	
Measurement Analysis	
Appraisal Results	
Tailoring Analysis	
Business and PI Goals	
Policy Review	Align policy and process Align policy and business
Project Lessons Learned	

Requirements Sources

Where do process requirements come from?

Sources	Process Requirements
User Input Suggestions PPQA Analysis Measurement Analysis Appraisal Results Tailoring Analysis Business and PI Goals Policy Review Project Lessons Learned	Process improvements Process defects Process training improvements

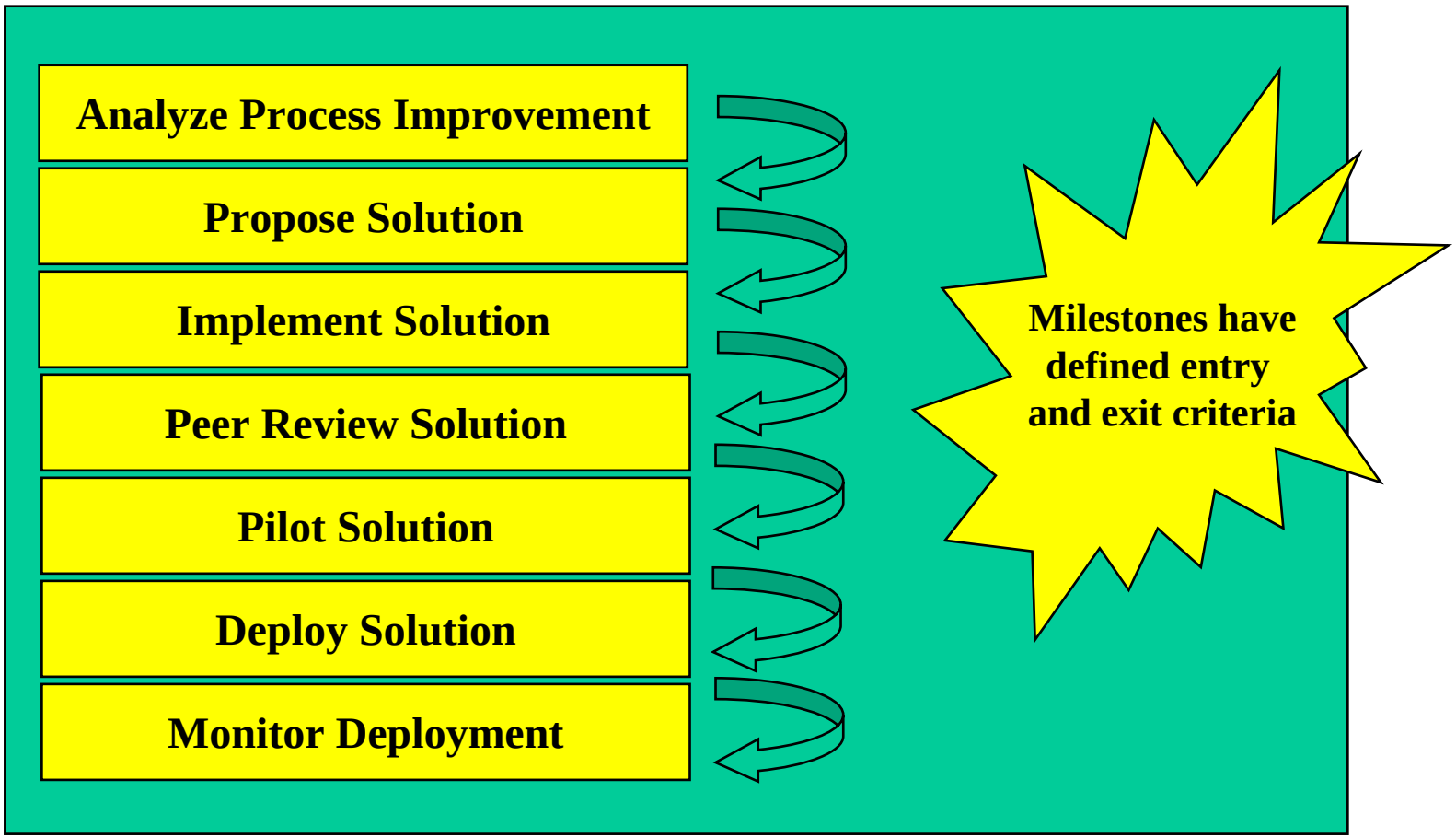
PI Life Cycle

Select a life cycle that makes sense for your PI efforts

- Most PI life cycles (IDEAL, for instance) consist of a sequence of planning, analyzing, implementing and measuring results
- Don't force-fit your standard project life cycle if it doesn't make sense (waterfall, RUP, agile)
- Tailor the standard life cycle for PI:
  - Adapt milestone entry and exit criteria
  - Adapt phase outputs
  - Project templates and other assets may not apply to PI

The key is to have milestones with defined entry and exit criteria that make sense for process improvement activities

PI Life Cycle - Example



Work Breakdown Structure – 1

A Process Improvement (PI) WBS contains two classes of elements:

- Technical Elements – those elements that relate specifically to the engineering aspects of making changes to your processes
- Management Elements – those elements that ensure your PI project is planned, managed and supported

The PI Life Cycle is reflected in the WBS

Work Breakdown Structure – 2: Technical Elements

Technical Elements in a PI WBS:

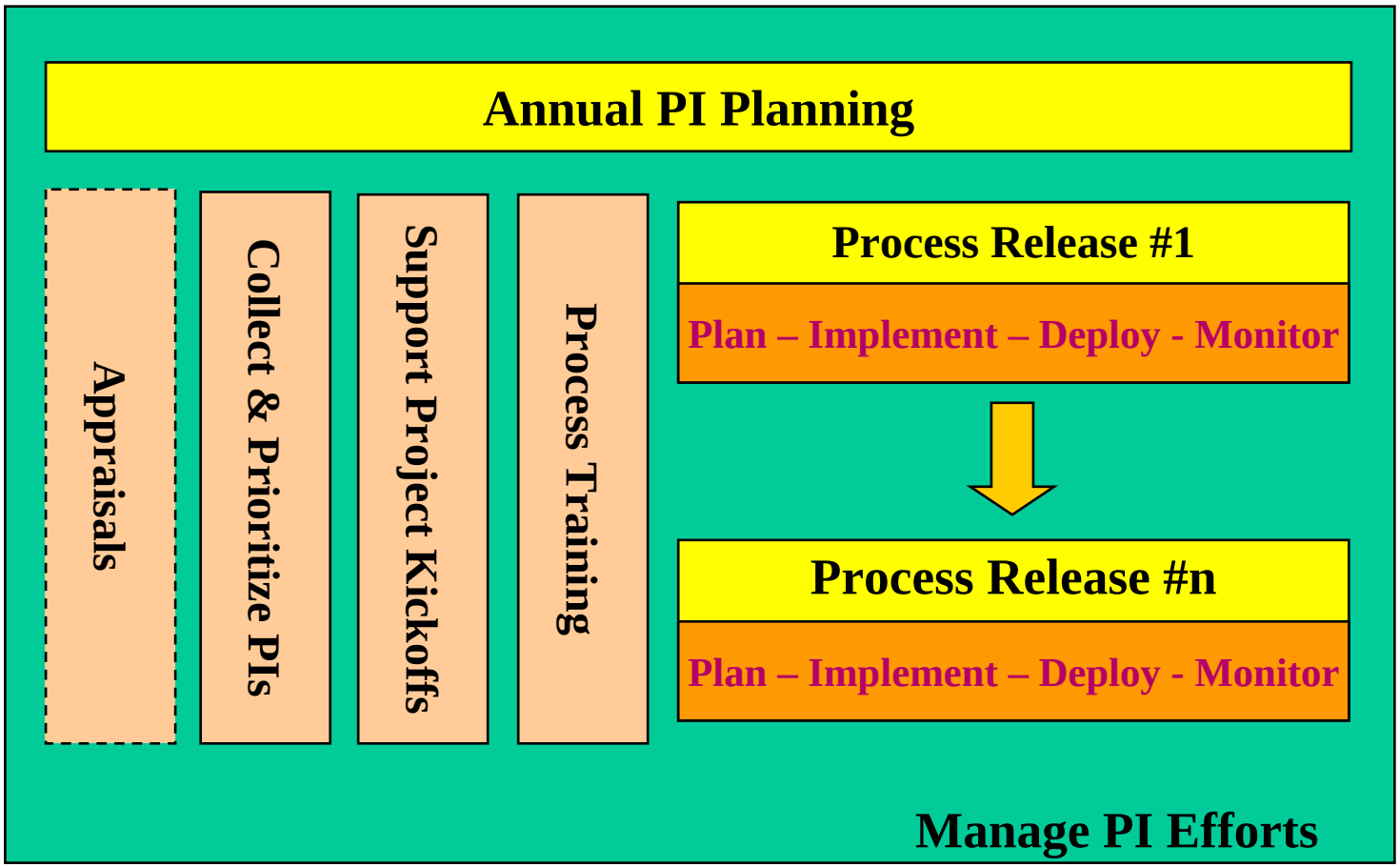
- Identification of PI opportunities (requirements definition)
- Process Change Board activities (review and prioritize incoming change requests and improvement ideas)
- Process improvement implementation (design and definition)
- Process improvement deployment
- Process deployment monitoring
- Appraisal activities
- Process training (refresher training and for new team members)
- Process assistance for newly started projects

Work Breakdown Structure – 3: Management Elements

Management Elements in a PI WBS:

- Planning and managing the PI effort
- Measuring project progress and reporting status
- CM and PPQA of PI efforts
- Collecting lessons learned on PI activities
- PI project-specific training for PI personnel
- Supplier Agreement Management for PI resources (human resources, training, tool licensing, etc)

PI Project Overview



Estimation Considerations

Effort estimation should:

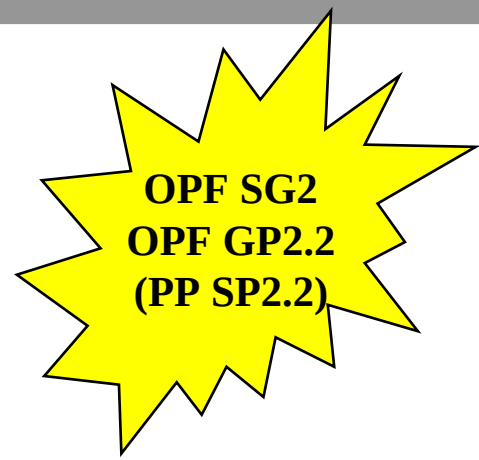
- Use historic data for PI tasks (if you don't have it, you will after this year!)
- Include effort for all items in the WBS
  - ROM estimates by PI
  - Ongoing efforts = effort * time period * # of people
- Include effort from ALL necessary roles, not just the PI Lead
- Include licensing fees (if applicable), training course fees, conference fees and travel costs.
- Include contractor / consulting costs
- Document your assumptions to help you improve

Schedule Considerations

When generating your PI schedule:

- Take into account both the effort required and the resources that are going to be available
- Don't schedule process releases (or appraisals) during peak workload times in your organization
- Consider typical vacation and holiday schedules
- Spread the work across the year avoiding spikes in resource needs

Risks



Tailor your organization's risk management approach for process improvement:

- Many sources of risk will translate directly to PI (resource availability, sponsor commitment, lack of user involvement, requirements instability, etc)
- Use your organization's risk reporting tools if feasible
- Review the requirements, WBS and other plan components for potentials risks
- Develop a list of PI specific risks for future use
- Solicit input from other project managers (or PMO)

Resource Management

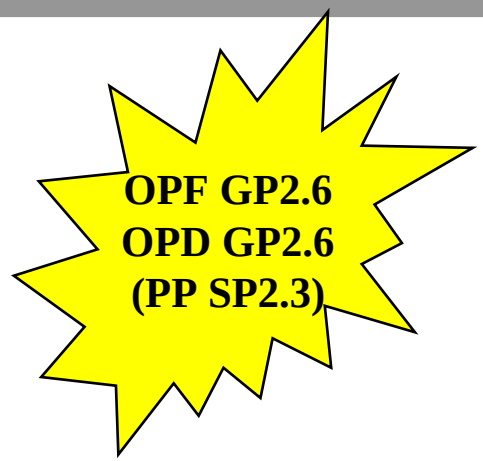
Plan to track actual versus planned resource needs:

- Find a way to get the data even if it's not automated
- If actual resources are less than planned, determine if
  - ☺ Estimated effort was high, so more resources are not needed – the work will be done in fewer hours
  - ☹ More resources are needed – communicate this to senior management

OPF GP2.3
OPD GP2.3
(PP SP2.4)

PI Lead is responsible for communicating resources needs and issues to management

Data Management

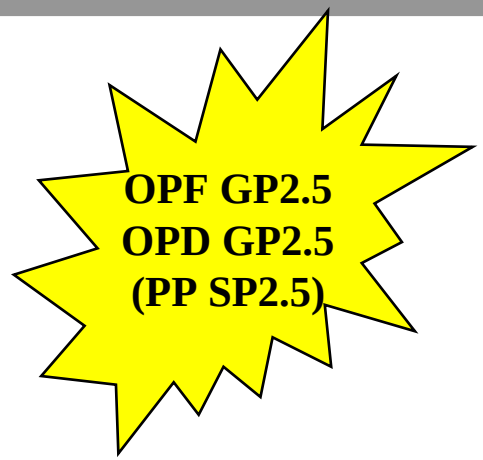


Plan to manage ALL your PI project data:

- PI plans
- PI status reports
- Change Board agendas, minutes, action Items
- Process improvement proposals/change requests
- PI measures
- Appraisal results
- PI lessons learned

PI project data management extends beyond process asset change management

Training Plan



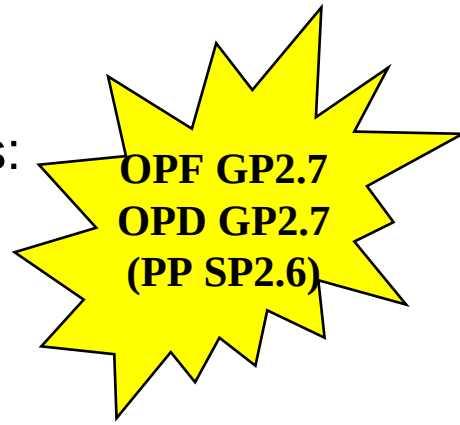
What training is needed for the PI project team?

- Process improvement processes
  - Change Board
  - Process development and deployment
  - Process asset change management
- Process improvement tools
  - Process modeling, design, and definition tools
  - Process asset library maintenance
- CMMI or other model training
- Project management training for the PI Lead

Stakeholder Involvement Plan

Plan stakeholder involvement in key process activities:

- Process Change Board activities
- Process improvement planning
- Process design and development
- Process deployment and training
- Tailoring guidance (development and use)
- Life cycle addition and modification
- Work environment standard maintenance



Don't forget to plan how you will ensure the stakeholders are involved as planned and what you'll do if issues arise!

Measurement Plan

OPF GP2.8
OPD GP2.8
OPF SP3.3

Measures support both the management and technical elements of your WBS:

- Use standard project measures to monitor the success of your PI project -- PI status reports should look like the other project reports in your organization
- Technical element measures monitor the success of process improvement activities (whether processes are being adopted as planned, for instance)

Process Improvement Plan Commitment

Documented commitment to the PI plan should be obtained from:

- Senior management
- PI personnel
- Other managers sharing proposed PI resources
- Other expected participants

This requires:

- Review of the PI plan in conjunction with other plans
- Reconciling the PI work with available resources

Making Use of Your PI Plan

Planning is only the first step, you must use the PI plan to manage your PI efforts:

- Compare actual progress against plan
- Address risks
- Deal with requests for scope changes
- Review the project plan quarterly (or more often) to ensure the project is being run as planned
- Report progress, issues and corrective actions taken to senior management
- Track issues through closure

The greatest value of a plan is in its use

Summary

Maintaining your Maturity Level is worth the planning effort. Planning enables you to:

- Make a credible request for resources to ensure you maintain your ML3 rating
- Know where you're headed, how far you have to go, and whether or not you're going to make it in time!

Questions

Contacts and More Information

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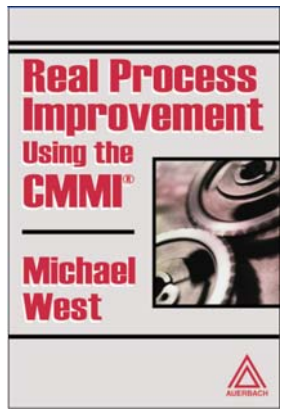
- Natural SPI's web site: www.naturalspi.com



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