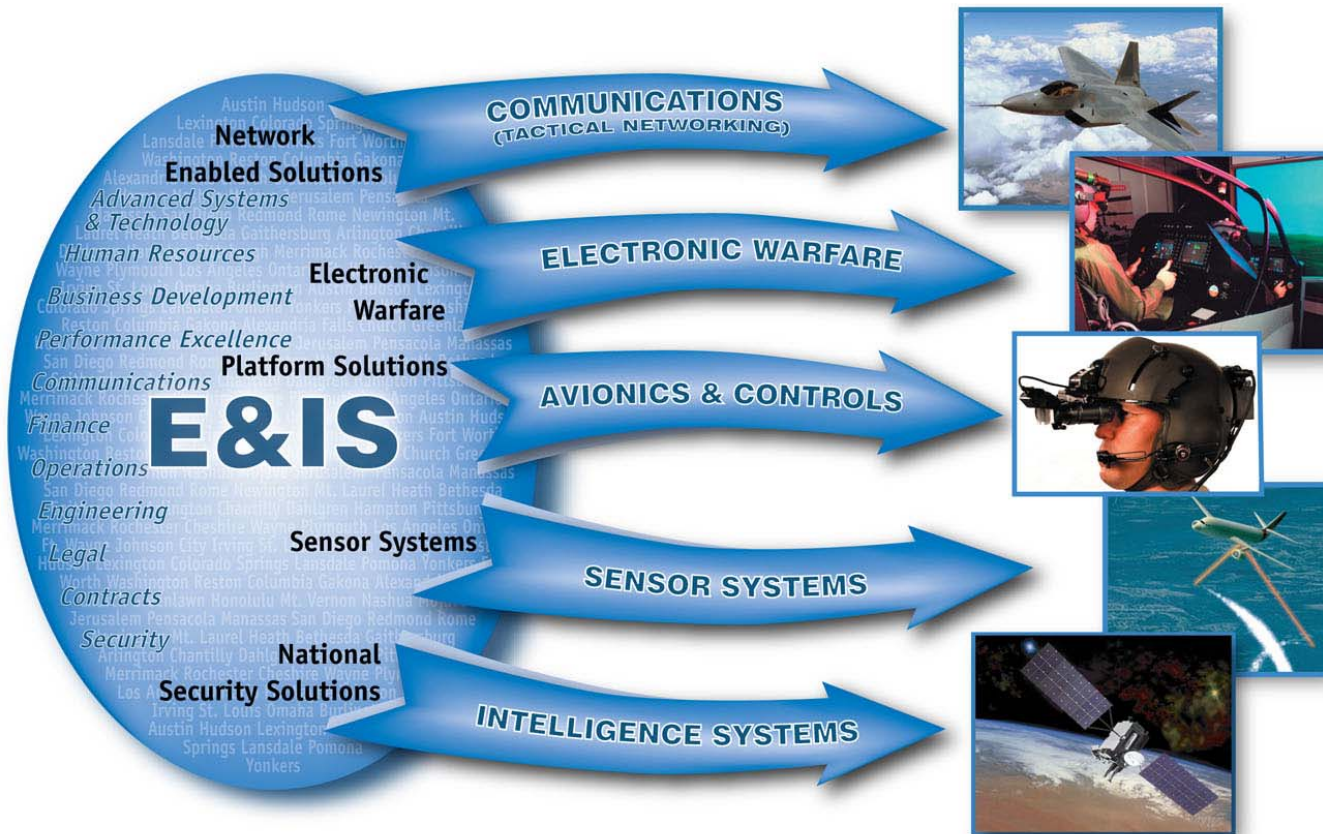


# Maintaining Institutionalization After the Appraisal Team Leaves

BAE Systems  
Electronics and Integrated Solutions Operating Group  
Nashua, New Hampshire  
USA



- Introduction
  - The Organizational Facts
  - Experience Basis for Premise and Presented Approach
- “Elastic Band Phenomenon”
  - Comfort Zone Scenarios
- Making It Easy To Do The Right Things
- Conclusion
- Final Thoughts

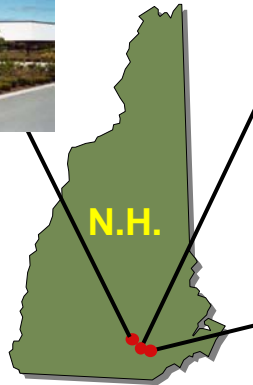




Pomona



Merrimack



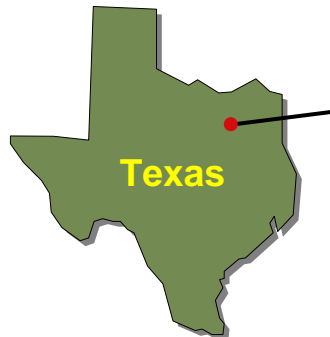
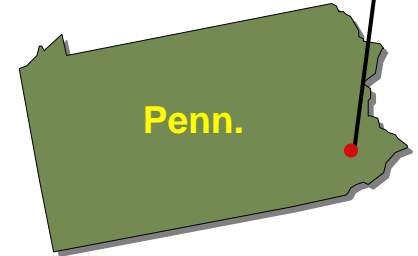
Nashua



Hudson



Lansdale



Fort Worth



Yonkers

# Sensor Systems



Mojave



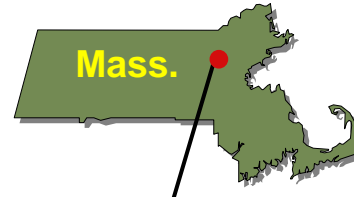
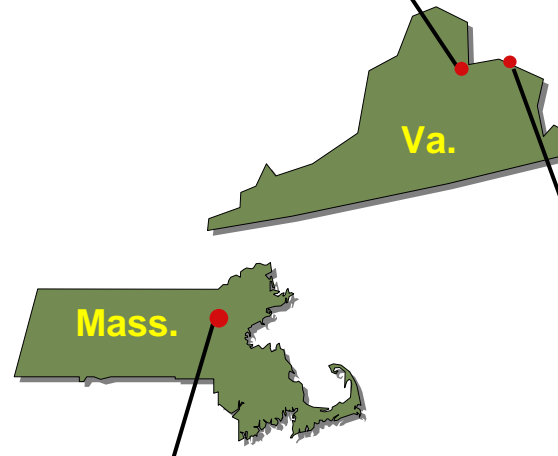
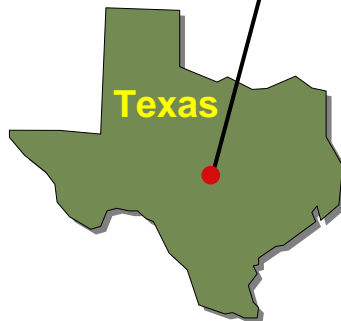
Austin



Manassas



Jerusalem  
(Rokar)



Merrimack



Nashua



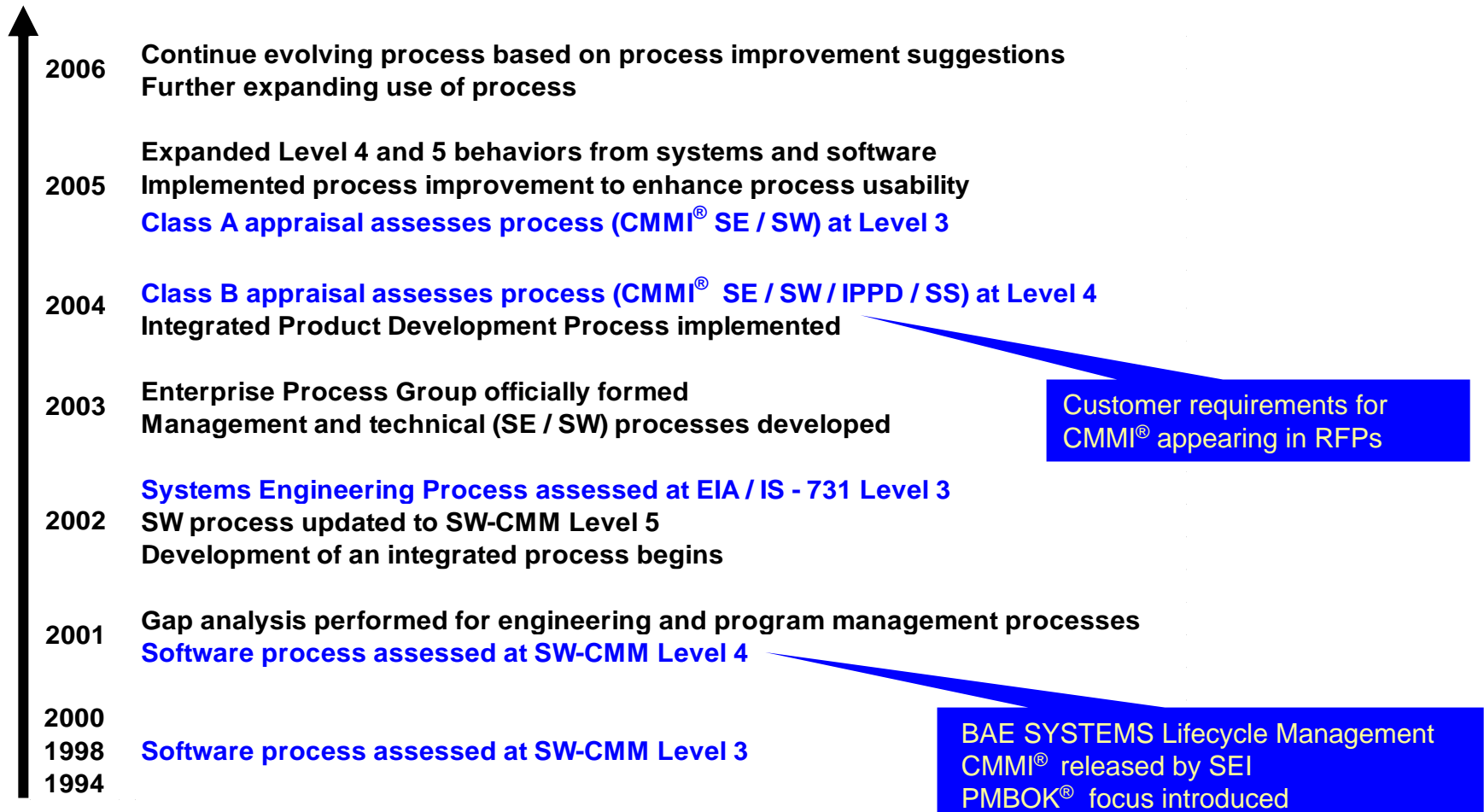
Lexington



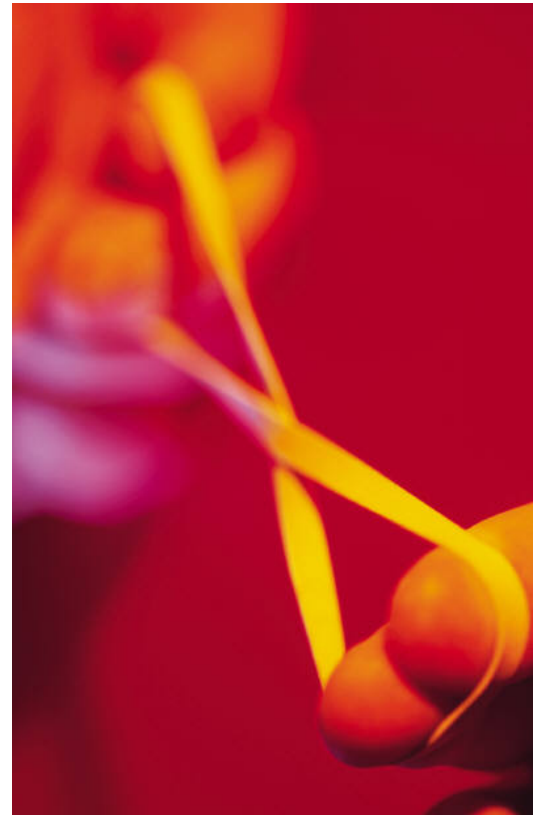
Washington, D.C.

- Twelve years experience with appraisals and assessments
  - Four Software CMM® assessments
  - Two EIA / IS 731 appraisals
  - Two CMMI® appraisals
  
- SEI certified *Introduction to CMMI®* instructor on Enterprise Process Group staff
  
- Enterprise Process Group participant on SEI SCAMPI<sup>SM</sup> upgrade team

# Process Development Time Line



- The Elastic Band Phenomenon Premise
  - Once a formal appraisal or audit has been completed, the high energy and extra attention to process compliance will naturally wane, and the organization will tend to migrate toward the pre-appraisal comfort zone





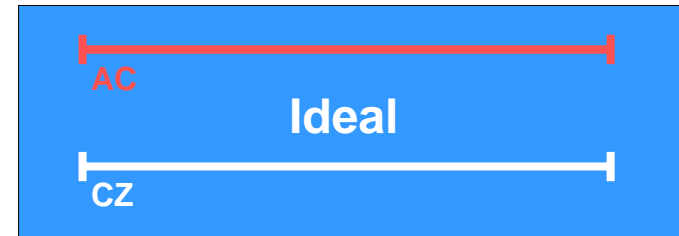
The appraisal coverage (AC) is less than the organization's comfort zone (CZ)

- Following the appraisal, the organization remains in its comfort zone



The appraisal coverage is equal to the organization's comfort zone

- Following the appraisal, the organization remains in its comfort zone



The appraisal coverage stretches the organization's comfort zone

- Following the appraisal, the organization reverts back to some point less than its original comfort zone (Elastic Band Phenomenon)



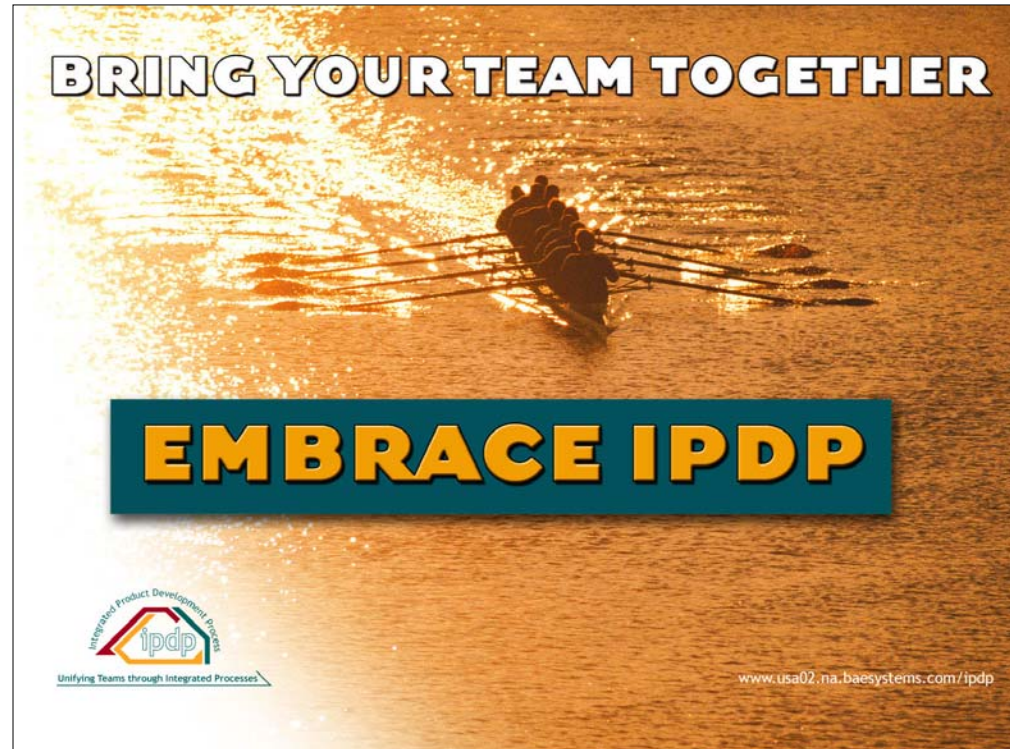
Any reduction to process compliance emphasis may result in:

- Non-uniform application of the process
  - Reduced familiarity with the process through non-use
  - Increased cost of rework for process compliance
- Confusion as to when it is right to follow the process
  - Impression that compliance is only needed to pass appraisals
- Practitioners' frustration with management for providing mixed signals on process compliance
  - Partial/Minimal process compliance; quality suspect

**Potential for Poor Project Planning  
and Poor Project Execution**

- To facilitate institutionalization, the Enterprise Process Group ensures the process is easy to use
  
- Approaches/techniques we are using:
  - Process marketing
  - Ease of access
  - Process training
  - Facilitated project start-up
  - Planning work product reviews
  - Process automation and process aids
  - Internal process assessments
  - Active process ombudsman
  - Web-based process tips
  - Solicited process improvement ideas

- Display eye-catching posters around your company
- Instill a message:  
“Bring Your Team Together”
- Reinforce with a slogan:  
“Unifying Teams Through Integrated Processes”
- Develop a logo:  
“IPDP” is our Integrated Product Development Process



The screenshot shows a web browser window with the address <http://www.usa02.na.baesystems.com/ipdp/index.htm>. The page header includes the IPDP logo and the text "Integrated Product Development Process" and "Unifying Teams Through Integrated Processes". A BAE SYSTEMS logo is in the top right. A dark green sidebar on the left contains a navigation menu with items like "IPDP Home", "E&IS Today", "Engineering Process for Small Projects (EPSP)", "Process Assets Library", "About IPDP", "IPDP Process", "IPDP Help", and "Ask the EPG", along with a "Search" button. The main content area features a "Welcome to your IPDP website!" message, a link to "Check out the Streamlined Process, updated Activity Flows, and Process Tips!", and a "Summary of Recent Changes to IPDP: Ver 2.3" section with sub-links for "Release Features", "Update to Release Notes", "Release Notes", and "Summary of Changes". Below this is an "IPDP Evolution:" section with a "Year in Review" link. To the right, there is a photo of a man in a suit with the caption "IPDP... start programs Green, keep them Green" and a "Note of the Day:" section titled "Measurement Plan" with a descriptive paragraph. The "Evolution" logo is also present.

Institute a comprehensive Web site that is easily navigated

- Effective training is key to the success of a process
  - Multiple levels of training required
  
- Process introduction course
  - General material and recent changes
  - Annual refresher required
  
- Integrated training for both the planning and execution phases
  - Includes project management and technical management
  
- Related training for Peer Reviews, Decision Making, Risk Management, and Supplier Management

- The Enterprise Process Group and the Project Team coordinate the launch activities to develop a comprehensive project plan in a timely manner
- The Project Launch mentoring environment
  - Is a series of modules designed around project planning
  - Provides reinforcement of the process
  - Scopes the process based on project attributes
  - Facilitates planning work product development with project team leads



–The Enterprise Process Group is actively engaged in the project's planning activities

- Guides planning work product development during Project Launch
- Participates as a stakeholder
- Checks planning work products compliance
  - Review lists guide the development of work products and are used as the checklists for audits

**Enterprise Process Group Partners with the Project Team during Project Planning**



## Process Customization Aid

- Uses a series of questions to help the project team select the applicable process elements
- Establishes the standard project shared area
- Pre-populates project information within the planning work products

The screenshot shows a software window titled "PSP information" with a tabbed interface. The active tab is "PROJECT ATTRIBUTES". The window contains several sections with checkboxes and radio buttons:

- ELEMENTS:** Select the system elements that apply to this project (check all that apply).
  - Systems
  - MSPA
  - IM
  - Software
  - Electronic
  - Mechanical
  - Supportability
- PHASE REVIEWS:** Which phase reviews will this project be using? (check all that apply).
  - Phase Review - 2B
  - Phase Review - 2C
  - Phase Review - 3A
  - Phase Review - 3B
  - Phase Review - 4
  - Phase Review - 5
  - Phase Review - 6
  - Phase Review - 7
- SUBCONTRACTORS:** Will this project have any major development subcontractors (>\$3M)?
  - Yes
  - No
- IV & V:** Will this project have a deliverable IV&V plan?
  - Yes
  - No
- SYSTEMS ANALYSIS AND DESIGN:** Systems for this project will have: (check all that apply).

Analysis:	Design:
<input checked="" type="checkbox"/> Structured	<input checked="" type="checkbox"/> Structured
<input checked="" type="checkbox"/> Object-Oriented	<input checked="" type="checkbox"/> Object-Oriented
<input checked="" type="checkbox"/> Adapted	<input checked="" type="checkbox"/> Adapted
- SW ANALYSIS AND DESIGN:** Software for this project will have: (check all that apply).

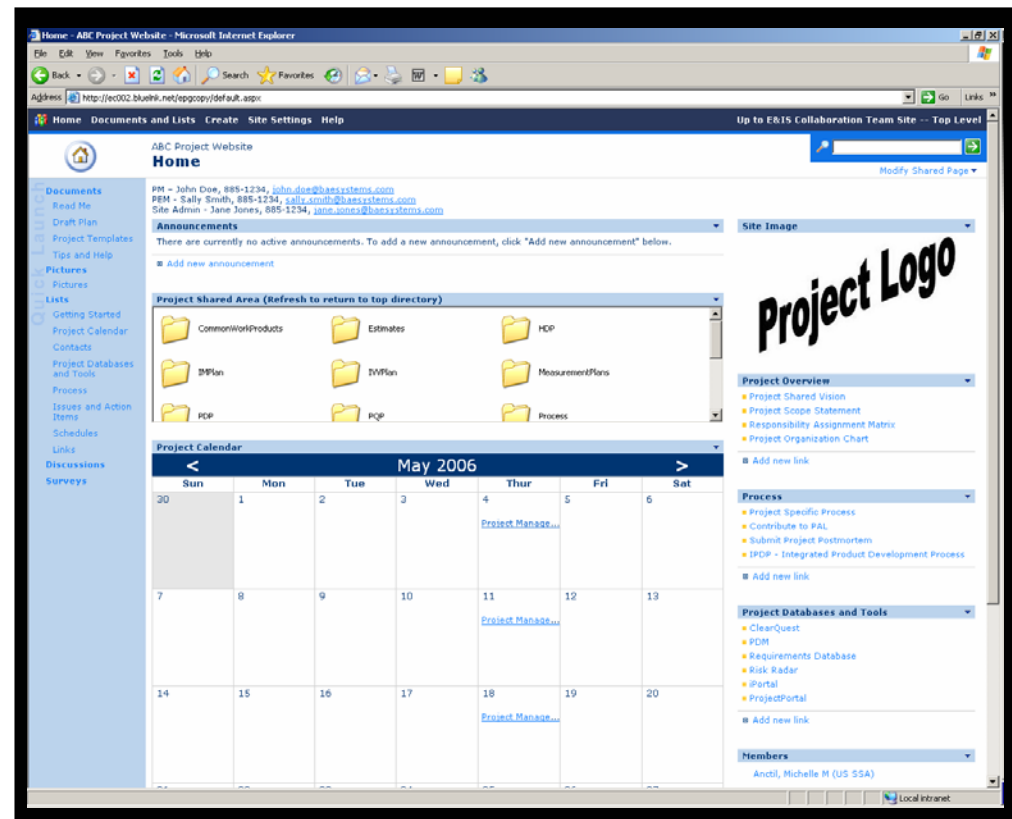
Analysis:	Design:
<input checked="" type="checkbox"/> Structured	<input checked="" type="checkbox"/> Structured
<input checked="" type="checkbox"/> Object-Oriented	<input checked="" type="checkbox"/> Object-Oriented
<input checked="" type="checkbox"/> Adapted	<input checked="" type="checkbox"/> Adapted

Navigation buttons: "EXIT" (top right) and "NEXT >>" (bottom right).

**Automation facilitates process use and compliance**

## Project SharePoint Template

- Enables a collaborative team environment
- Supports and automates aspects of the process
  - Issues & actions tracking
  - Project calendar
- Provides a single point of access for project information
- Common format allows new project personnel to quickly find project information



## Responsibility Assignment Matrix (RAM) Aid

- Facilitates preparation for project meetings and work product reviews
- Ensures accurate stakeholder involvement for specific reviews
- Automates meeting invitations using MS Outlook
- Creates agenda, attendee list and minutes template

**Legend for Meetings and Work Product Reviews**  
 O = Roles Developing the Work Product  
 R = Roles Expected to Review/Attend  
 A = Roles Required to Review & Approve  
 X = Review Meeting Participant

Project Role	Stakeholder Name	To automatically s
Project IMT & Functional Leads		
Project Manager	<individual name>	
Business Management Lead		
Information Management Lead		
Project Engineering Manager (PEM)		
Operations Program Manager (OPM)		
MS&PA Lead		
System Engineering Manager (SEM)		
Software Engineering Manager		
Electronic Engineering Manager		
Mechanical Engineering Manager		
Supportability Engineering Manager		
Risk Officer		
<other>		
<integrated product team name A>		
IPT Lead		
Business Management Lead		
Information Management Lead		
Subcontract Administrator		
MS&PA Representative / Quality Engineer		
Project Engineering Manager (PEM)		

Toolbar: View Specific Information | Check Stakeholder Email(s) | **Set Up Meeting** | Analyze RAM

- Align with CMMI® and are independently conducted
  - Performed on individual projects
  - Staffed with people knowledgeable in the CMMI® and the organizational process
  - May be conducted periodically on projects with long durations
  - Similar to a Class B (without the organizational elements)
  
- Check for compliance with CMMI® and the organizational process
  
- Assess application and understanding of the process
  
- Indicate the effectiveness of:
  - Process institutionalization
  - Process training
  - Project start-up process

- Web-based mechanism to ask process-related questions
  - How does the process apply?
  - Where do I find...?
  - Can you tell me how this practice relates to my project?
  
- Quick response is provided
  - Process Ombudsman confirms content and intent with requestor
  - Answer is developed and vetted with process team
  - Response sent back to requestor
  
- Web-based Frequently Asked Questions (FAQs) developed from Process Ombudsman activity

- Process Tips provide quick access to additional guidance
  - Focused on specific process topics
- Portal to the process
  - Provides interpretation of process intent
  - Reinforces process definitions
  - Reinforces correct behavior
  - Alerts of common misunderstandings
  - Links to related items

### Making Decisions

IPDP Lingo

The criteria represent various factors important to the decision makers and influenced by the alternatives.

Word from the Wise

Check the Process Assets Library (PAL) for examples of trade studies.

Making Decisions involves a formal evaluation process to identify, evaluate, and select alternative solutions for **critical decisions** that have multiple alternatives and multiple criteria.

A formal evaluation process reduces the subjective nature of the decision and has a higher probability of selecting a solution that meets the multiple demands of relevant stakeholders.

A formal evaluation process can vary in formality, type of criteria, and methods. Less formal decisions can be analyzed in a few hours and result in a short report. More formal decisions may require separate plans, months of effort, meetings, simulations, prototypes, piloting, and extensive documentation.

Multiple methods exist for decision making. Each method has situations for which it is better suited. For more information about making decisions, take one of the **Make Decisions** courses available through ETOD.

**When Should I Use the Make Decisions Practice?**

For:

- a decision that can cause schedule delays over a certain percentage or specific amount of time
- a decision that can drive a favorable cost to benefit ratio between this process and the decision's impact
- a decision directly related to topics considered medium or high risk
- a decision that selects a supplier
- a decision that selects COTS or reuse products
- a decision that can resolve requirements conflicts
- a decision about system architecture selection
- a decision that selects among alternative engineering support environment choices
- a make-buy decision
- a decision related to changing work products under formal configuration control

**Your project must make the choices.**

**CAUTION**

When decisions must be made according to a specific schedule, information may be incomplete resulting in a risky decision. This risk should be monitored.

**IPDP Hyperlinks**

- [Make Decisions Practice](#)
- [Decisions Record Review List](#)
- [Perform Stakeholder Review List](#)
- [Perform Approval Review List](#)

**Making Decisions Navigation**

- Enterprise Process Group actively solicits improvement suggestions from users
  - Accomplished directly through the Process Web site
  - Rewards for best suggestions
  - Results in process updates
- User involvement facilitates buy-in
  - Enables best practices
  - Encourages continuing inputs
  - Improved process enhances process institutionalization

**Institutionalization is Enabled through  
User Involvement**

- Expand the use of process to a wider spectrum of projects
  - Familiarize the largest possible audience with the process and the process terminology
- Leverage process, by its use, during proposal preparation
  - Ease transition between the proposal, and project planning and execution
    - Development of planning artifacts, technical plans, top-level system architecture that are aligned or compliant with the process
  - Design quality in (by use of the process) from the beginning

**Reduces future Elastic Band Phenomena**



- Establish an organizational standard process
  - It must be comprehensive, concise, coherent; yet easily usable
- Be watchful of the organization being pulled out of its comfort zone, and then relaxing to a previous level or lower (Elastic Band Phenomenon)
- Provide process support and process aids to reduce the tendency to revert to a relaxed state
  - To make the process easier to understand and use correctly
  - To make compliance routine; not unique (institutionalization)
- Implement process improvement as part of the process
  - Methods to suggest improvements must be easy to use
  - Suggestions must be embraced as improvement opportunities

**–Questions?**

**–Comments?**

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