

*Defining the Future of Measurement Practice*

# ***Practical Software and Systems Measurement***

*A foundation for objective project management*



***RUP for PSM Plug-in SE  
Update Workshop  
26 July 2007***

***Doug Ishigaki, IBM***

***PSM UG***

***23-27 July 2007***

***Golden, CO***

# *Defining the Future of Measurement Practice*

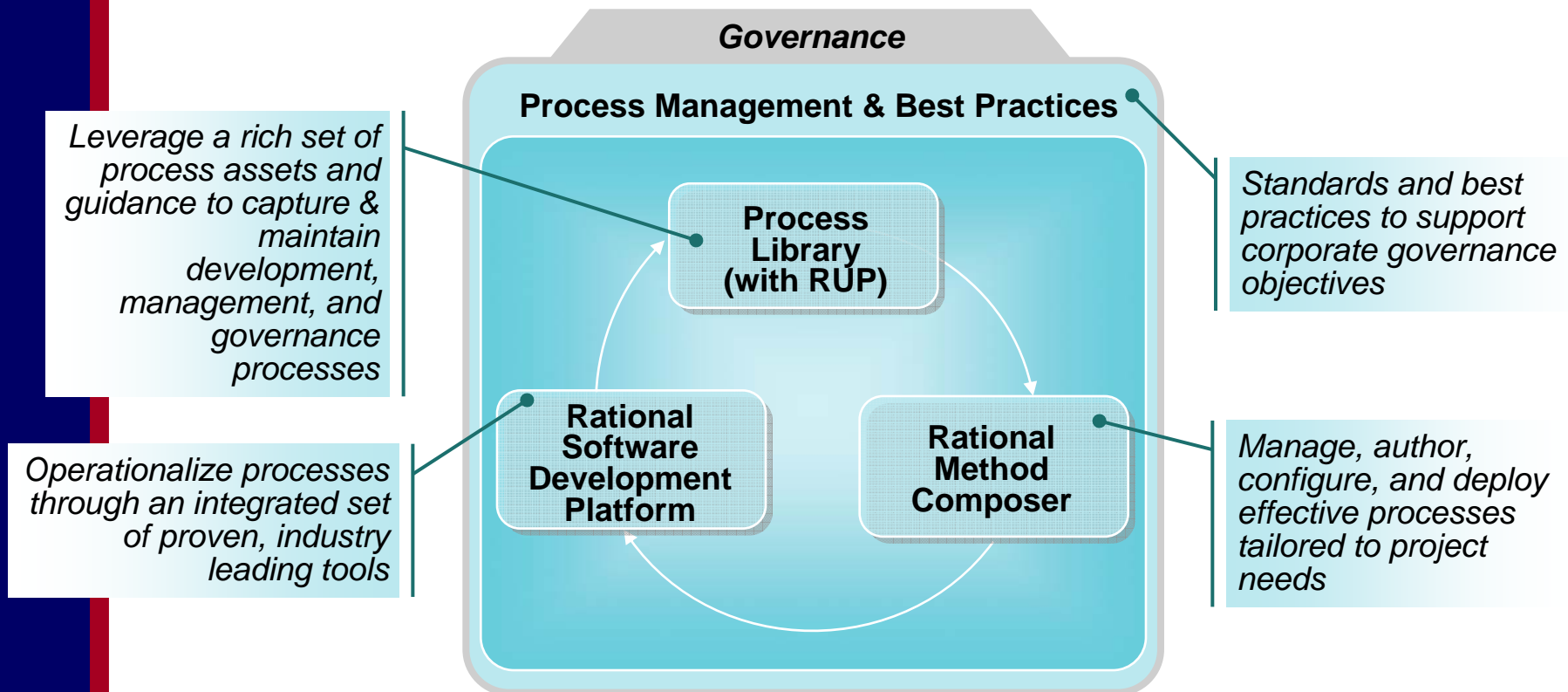
## **RUP for PSM Plug-in**

- **PSM Plug-in history**
  - **2003 – Presentation and White paper of “Practical Measurement in RUP”**
  - **2004**
    - **Jan – Initial release v1.0**
    - **TWG – v1.0 review**
  - **2006**
    - **Jan – v2.0 release**
      - Ported to Rational Method Composer v7.0**
      - Incorporated comments from TWG 2005**
    - **TWG – v2.0 review**
  - **2007**
    - **Planned – v3.0 release (Sep/Oct)**
      - Include Systems Engineering content, specifically SE Leading Indicator Guide v1.0**
    - **PSM UG – Review**
- **Over 3500 downloads (v1.0 and 2.0)**

# *Defining the Future of Measurement Practice*

## *Process Management*

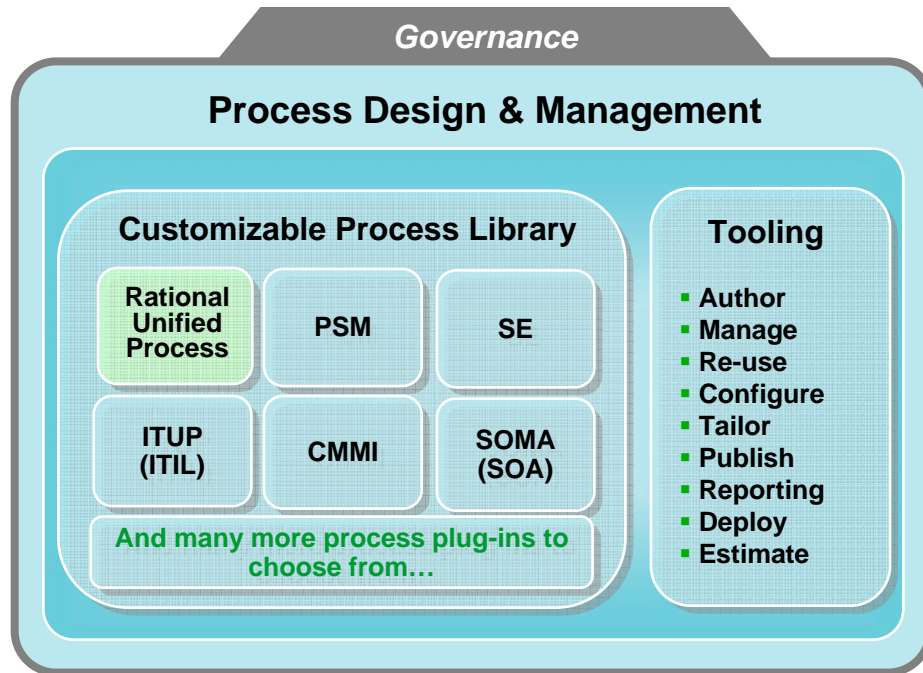
Create, customize, publish, and enact software & systems development processes according to project needs



# Defining the Future of Measurement Practice

## Rational Process Library

A robust collection of best practices guidance



- **Rational Process Library**

- *A rich process library offering best practices guidance for software and systems development, management, and governance*
- *More than 100 selectable content packages that can be applied to a variety of processes and domains*
- *Includes IBM Rational Unified Process (RUP)*
  - *Proven best practices for software and systems delivery and implementation and effective project management*
  - *Most broadly adopted process in the world*

## ***Defining the Future of Measurement Practice***

# ***Method Plug-in Value***

### ***What is a plug-in?***

- ***A container for method content (the guidance) and processes (process patterns and delivery processes)***
- ***Examples: RUP, RUP for Systems Engineering, RUP with PSM, etc.***

### ***Value:***

- ***Enhances individual productivity with industry-proven configurable techniques and practices to fit individual project needs***
- ***Supports team collaboration and individual practitioners with context-sensitive process guidance across geographies and functions***
- ***Enables early action on project risk using iterative processes centered around business priorities and stakeholder needs***
- ***Promotes organizational transformation with comprehensive education services and an extensive consultant and partner ecosystem***
- ***Reduce project startup time with out-of-the-box guidance and processes***

# Defining the Future of Measurement Practice

RUP for Systems Engineering (MDSE) with PSM (Beta 1) - Microsoft Internet Explorer

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PSM Systems Engineer Team

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    - Measurement Information Model (PSM)
  - PSM Guidelines
    - Measurement (PSM)
    - Measurement Analysis Technique (PSM)
    - SE Leading Indicator Guide (PSM SE)**
  - PSM Information Measurement Specification E
    - Systems Engineering Leading Indicators
      - SE Leading Indicator - Risk Handling T
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      - SE Leading Indicators - System Definit
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      - SE Leading Indicators - Work Product A
  - PSM Work Products
  - PSM References

## Guideline: SE Leading Indicator Guide (PSM SE)

This Systems Engineering Leading Indicators Guide is the result of a project initiated by the Lean Aerospace Initiative (LAI) Consortium in cooperation with the International Council on Systems Engineering (INCOSE), Practical Software and Systems Measurement (PSM), and Systems Engineering Advancement Research Initiative (SEARI). Leading measurement and systems engineering experts from government, industry, and academia volunteered their time to work on this initiative. This document is issued by INCOSE as document number INCOSE-TP-2005-001-02.

### Relationships

Related Elements	
	<ul style="list-style-type: none"><li>Develop Measurement Plan (PSM)</li><li>Measurement Specification (PSM)</li></ul>

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### Main Description

## 1. ABOUT THIS GUIDE

Version 1.0  
15 June 2007  
Supersedes Beta Release, December 2005

This Systems Engineering Leading Indicators Guide is the result of a project initiated by the Lean Aerospace Initiative (LAI) Consortium in cooperation with the International Council on Systems Engineering (INCOSE), Practical Software and Systems Measurement (PSM), and Systems Engineering Advancement Research Initiative (SEARI). Leading measurement and systems engineering experts from government, industry, and academia volunteered their

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## ***Defining the Future of Measurement Practice***

# ***Objectives of the Workshop***

- ***Review and discuss PSM Plug-In (V2.0) content***
- ***Review and discuss updates for SE Leading Indicator Guide (V3.0 – Oct '07 target release)***
  - *Think about it in the context of the bigger systems engineering development process.*
- ***Discuss additional enhancements (SE related and non-SE related)***
- ***Identify additional reviewers (more extensive reviews)***

## ***Defining the Future of Measurement Practice***

### ***Intended Output***

- ***Feedback on current plug-in (V3.0 Beta)***
- ***Enhancements for future versions***
- ***Identify additional reviewers (more extensive reviews)***



## *Defining the Future of Measurement Practice*

# ***Reviewed Current Plug-in Content***

- ***RUP for Systems Engineering (MDSD) with PSM Beta 1***
  - ***Contains PSM content and SE Leading Indicators content***
- ***Reviewed Suggested Improvements***

## ***Defining the Future of Measurement Practice***

# ***Suggested SE (V3.0) Updates***

- ***Resolve terminology differences***
  - ***E.g.: Change Information Measurement Spec to just Measurement Spec.***
  - ***E.g.: RUP “Project Manager” is equivalent to “Program Manager” (specified in SE LI G)***
- ***Add relationships (hyperlinks) of the examples back into RUP content as well as to PSM ICM table.***
  - ***E.g., Add link in ICM to Requirements Trend example.***
  - ***E.g., Add link to Requirements Trend somewhere in the RUP Requirements Discipline or in Req Mgmt content***
  - ***E.g., Add link to ICM Risk Status measure to Risk Exposure Trend***
  - ***E.g., Links could be to ICM Measurable Construct or actual Measures.***
- ***Add the Measurement Spec template inline in the Template: Measurement Information Specification (PSM) page.***
- ***Also add a link from the Analysis Model section back to the PSM Analysis***
- ***Add example Measurement Specs (from PSM website) into the plug-in. Link to the ICM table.***
- ***Create standalone PSM configuration.***

## ***Defining the Future of Measurement Practice***

# ***Additional Suggested Improvements***

***(Future PSM work that may or may not get into the next release)***

- ***Enhance getting started: Need additional content on what you need to do to start up a project or organization using PSM and how to do it. This essentially should be the PSM Roadmap. There is a roadmap in the plug-in, however, it's not really a roadmap. We should update this "roadmap" and make into a real roadmap.***
- ***Also should add these "evolution of an information need into a measurement plan" (page 15 in the book). This is a roadmap of a measure.***
- ***Enhance the workflow (WBS): Define predecessors/successor to the PSM tasks as defined in the Measurement Process Model (MPM).***
- ***Define a new process (activities) with just the MPM.***
- ***Add hyperlinks to external measurement publications. Not just PSM content***

# ***Defining the Future of Measurement Practice***

## ***Additional Suggested Improvements***

- ***Additional candidate PSM material to add:***
  - ***Technical Measurement Guide***
  - ***Measurement Specs (actual specs based on real-life)***
  - ***Example (not just a template) of a Measurement Plan. (not available yet)***
  - ***Example of Info Need List. (not available yet)***
  - ***Template and example of Measurement Analysis & Recommendation report (not available yet)***
  - ***Guidebook (download from members only section) (as attachment): “Measuring for Process Management and Improvement (MPM)”***
  - ***Add content from “Measures for Success: Lessons Learned from Applying PSM”***
  - ***Add white paper (as attachment): “Understanding the Roots of Process Performance Failure”, Charette, Dwinnell, McGarry. Although it doesn’t really reference PSM, it is useful information.***
  - ***White paper (as attachment): “Implementing a Successful Measurement Program: Tried and True Practices and Tools,” Jones (Cutter IT)***
  - ***(additional white papers on the site (10 total))***

***But do we want to include the material in the plug-in or just hyperlink to psm website? Pros and cons for both around availability (e.g., closed env) and access to up-to-date material.***

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# ***Additional Suggested Improvements***

- ***Additional candidate PSM material (attachments) to add:***
  - ***Presentation: “Using PSM to Implement Measurement in a CMMI Process Improvement Environment”. This is an organizational level pitch for measurement. Title seems to be misleading – doesn’t talk too much about CMMI?***
  - ***White paper: “Applying PSM to Enterprise Measurement”.***
  - ***PSM Insight Tool Mentors***
    - How to use Insight***
    - Link to tutorial (online?)***
    - Link to demo? Can we have the demo online on the PSM website?***
  - ***Measurement Technical Papers***
  - ***Security Measurement white paper (Caseley & Murdock). V3.0***
  - ***System of Systems white paper (draft)***
  - ***Measuring for Process Improvement white paper***
  - ***PSM 2005 Users’ Group presentation: “Measurement Mapping to the CMMI,” Pascal Rabbath (but review it first)***

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### ***Additional Suggested Improvements***

- ***Create a separate plug-in that contains only PSM content. (Not everyone uses RUP.)***
- ***Create (separate or integrated?) plug-ins for other TWG output (such as the Acquisition Measurement TWG)***
  - ***(Yes, but these are bigger projects that would require effort)***

## ***Defining the Future of Measurement Practice***

### ***Restatement of Objectives***

- ✓ ***Review and discuss PSM Plug-In content***
- ✓ ***Review and discuss updates for SE Leading Indicator Guide.***
- ✓ ***Discuss additional enhancements (SE related and non-SE related)***
- ✓ ***Identify reviewers (more extensive reviews)***
  - ✓ ***Cheryl Jones, Garry Roedler, Dan Houston, Joe Dean***

## ***Defining the Future of Measurement Practice***

### ***Next Steps/Action Items***

- ***Finalize PSM Plug-in V3.0 (release planned for end of September)***
  - ***Beta 1.5 currently available in conference proceedings for review.***
  - ***Send Doug email ([dishigaki@us.ibm.com](mailto:dishigaki@us.ibm.com)) if you wish to participate in review cycle.***
- ***Plan/prioritize additional improvements for future release (V4.0)***