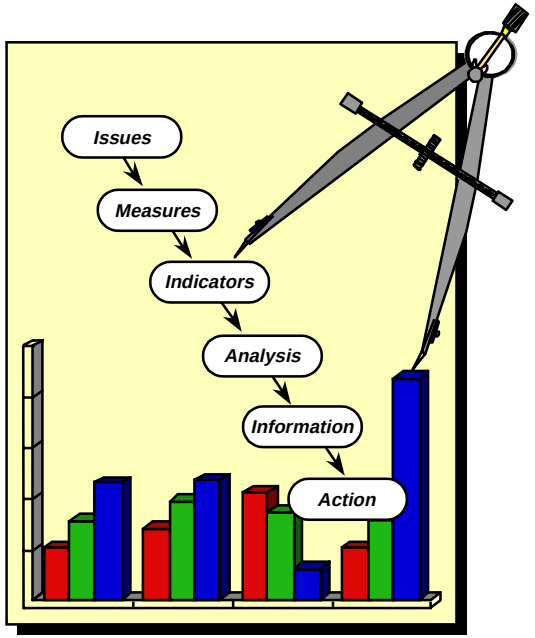
Practical Software Measurement

A guide to objective program insight



Lessons Learned In Implementing PSM

July 24, 1997

Joint Logistics Commanders
Joint Group on Systems Engineering

Office of the Under Secretary of Defense
Acquisition and Technology

Presentation Overview

- **PSM Transition**
  Programs, training, coordination

- **Lessons Learned**
  Software measurement best practices

PSM Transition
Programs, training, coordination

Types of Services Provided

- PSM Executive Presentations
- 1/2 Day Training
- 1 Day Training
- Tailoring Workshops
- Direct Program Support
- DoD Initiative Participation
- PSM Survey
- Distribution of Products
- Product Development Coordination
- Web Site
- Training and Support Coordination
- Transition Organization Support
- PSM Project Management

PSM Training

	1/2 Day Training	1 Day Training
1996	784	-
1997	542	133

Train-the-Trainer Sessions

Aug 1996	28
Jan 1997	22

PSM 1/2 Day Training - 1996

Date	Location	Number Trained	Rating
4-Mar-96	DCMC - Annual Conference	83	4.4
22-Apr-96	STC Tutorial	278	
16-May-96	CECOM TIM 7	26	
5-Sep-96	Satellite Broadcast ~	200	
24-Sep-96	NSWCDD	14	4.2
25-Sep-96	Pentagon - D.C.	34	4.0
26-Sep-96	Pentagon - D.C.	25	4.4
2-Oct-96	PEO (CU) Training	23	3.7
8-Oct-96	STRICOM (Modified)	17	3.4
6-Nov-96	FAA Training	19	4.2
13-Nov-96	DACS Training - Cancelled		
21-Nov-96	Pentagon - D.C.	44	4.0
22-Nov-96	Pentagon - D.C.	21	4.2

Total - 1996 **784**

PSM 1/2 Day Training - 1997

Date	Location	Number Trained	Rating
27-Jan-97	INCOSE	27	3.1
6-Feb-97	FAA	10	4.3
25-Feb-97	FAA	11	4.2
5-Mar-97	FAA	11	4.2
11-Mar-97	FAA	12	4.0
12-Mar-97	Coast Guard	17	4.4
25-Mar-97	NAVAIR	23	3.6
26-Mar-97	FAA	4	4.0
27-Mar-97	IEEE - ECBS	6	
18-Apr-97	Lockheed Martin	21	3.9
28-Apr-97	STC	300	n/a
6-May-97	FAA	19	
4-Jun-97	FAA		
16-Jun-97	Lockheed Martin - Manassas	28	
21-Jul-97	User Conf. - Vail	53	4.2
	Total - 1997	542	

PSM 1 Day Training - 1997

Date	Location	Number Trained	Rating
12-Mar-97	Coast Guard	18	4.4
21-May-97	D.C. - Crystal City	19	4.6
22-May-97	Lockheed Martin - Manassas	16	
11-Jul-97	Arnold Engin Devel. Ctr	35	
14-Jul-97	Peterson AFB	45	4.4

Total **133**

Use of PSM

For What Organizations and Programs Are You Implementing PSM?

Lessons Learned
Software measurement best practices

Tailoring Approach

- Identify, Categorize, and Prioritize Software and System Related Issues
- Define Associated Issue - Driven Information and Measurement Requirements
- Evaluate Proposed Developer Measures Against the Requirements
- Identify Required Measures
- Identify General Implementation Requirements

Lessons Learned

- Put the Program Manager, Staff, and the Contractor in the Same Room to Identify Program Issues
- Program Management and Developer Staff Agreed on the Issues
- Measurement Data Was Available - Although There Were Issues About Access to Some Data
  - Subcontractor Data was Limited
  - Certain Required Data was Not Collected
- Data Was Not Always Well Defined

Lessons Learned

- *Tailoring is a Learning Process - Don't Short-Circuit it by:*
  - *Focusing on a Pre-Defined List of Measures*
  - *Committing to a Tool First*
  - *Blindly Taking the Advice of Experts*

Lessons Learned

- The Priority of the Software Issues Changes Significantly Over the Course of the Program
- Measurement Is Effective Even Without "Perfect" or "Complete" Data
- Start with A Small Set
- Analysis Feedback to the Developer Is Extremely Important

Lessons Learned

- *Measures Are Not Absolutes - They Only Provide Indications of Concerns*
- *Analysis is an Investigative Process - A Standard Report is of Limited Value*
- *Use Measurement to Improve the Process - Don't Measure Individual Performance*