



Technical Working Group Meeting 26-27 March 2003

AGENDA

Wednesday, 26 March 2003

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| 8:00am - 8:30am | Sign-In, Coffee |
| 8:30am - 9:00am | <i>“The Current Status of PSM”, Cheryl Jones, US Army TACOM-ARDEC</i>
Cheryl will update attendees on recent PSM activities, upcoming events, and the status of PSM products. In addition, opportunities for participation will be identified. |
| 9:00am - 9:40am | <i>“Focusing a Set of Measures Using PSM”, Joyce Statz, TeraQuest Metrics, Inc.</i>
When a zealous improvement team considers what measures would be good for its organization, it sometimes goes overboard. This group selected more than 40 measures they thought their (CMM Level 2) community would appreciate, but realized as they worked on the measurement system to support these, that they had agreed to a lot of work. Discussion with the potential users of the measures highlighted the several they thought useful, and narrowed the set considerably. We will examine the process of getting from the "potential many" to the "treasured few," and how those measures eventually were used and extended. The PSM process was key to establishing a valued measurement program for this organization. |
| 9:40am - 10:10am | <i>“Status of COSYSMO”, Chris Miller, Software Productivity Consortium</i>
Chris will brief attendees on the status of the COSYSMO systems engineering project. |
| 10:10am - 10:40am | AM Break |
| 10:40am - 11:20am | <i>“Integrity Assurance: Safety/Security Extensions to CMMI® and iCMM®”, Linda Ibrahim, Federal Aviation Administration</i>
A project jointly led by the Federal Aviation Administration (FAA) and the Office of the Under Secretary of Defense (OSD) is underway to develop safety/security extensions to the two integrated capability maturity models: CMMI and iCMM. This talk will describe the background, approach, and current status of this effort that engages an international team from across government and industry. |

- 11:20am - 11:50pm ***“Safety Process Measurement, Paul Caseley, MOD UK”***
MOD UK is currently sponsoring research into techniques for measuring safety processes. Some of the results of this research will be presented and will include the difficulties in identifying information needs for projects that depend on safety processes. It will also make a case why it is important that this system aspect of measurement be included as part of PSM so that PSM can provide the generic solution for a project's safety process information needs.
- 12:00pm - 1:00pm Lunch on your own (cafeteria downstairs)
- 1:00pm - 1:40pm ***“Using PSM at All Levels in an Organization”, Garry Roedler, Lockheed Martin Corporation***
This presentation describes a Lockheed Martin organization's use of an information-based measurement approach, based on the Practical Software and Systems Measurement (PSM) process. The presentation will describe how the measurement process has been applied at the enterprise, business unit, and project levels to provide an integrated measurement approach that addresses all disciplines.

At the enterprise level, the organization created integrated measurement guidance that addresses the measurement needs of all disciplines for technical solutions and services. The guidance is then tailored at the business unit and project levels to address business unit and project-specific information needs.
- 1:40pm - 2:20pm ***“Integrating PSM and the Balanced Scorecard”, Dave N. Card, Software Productivity Consortium”***
This presentation explains how, together, PSM and the Balanced Scorecard, provide a basis for enterprise measurement. It reviews the basic concepts of the Balanced Scorecard, then shows how these can be integrated with PSM. The four perspectives of the Balanced Scorecard correspond to the PSM Information Categories. Simple modifications to the Process Model enable it to be applied to address enterprise information needs. The Information Model applies unchanged, although new indicators and analysis methods are required.
- 2:20pm - 2:50pm PM Break
- 2:50pm - 3:30pm ***“Using PSM Insight”, Dave Morris***
Insight user experiences will be described.
- 3:30pm - 4:10pm ***“End-to-End (E2E) Test Process and Tool”, Fred Hall, Independent Engineering, Inc.***
This presentation describes the End-to-End (E2E) test process and tool that were developed to provide a quantitative approach to test a System of Systems (SoS). The E2E tool traces the

execution of each individual functional thread that can be executed in a SoS. The output of the tool provides objective data to support SoS risk assignment, functional thread dependencies, test case/script generation, regression testing, and “ripple effect analysis” for system & software changes.

4:10pm - 4:30pm

“DoD Policy and Legislation”, Rob Gold, OSD

Rob will brief attendees on the changes to DoD 5000 (including measurement). Performance measurement language in section 804 of the defense appropriations bill will also be described.

4:30pm

Adjourn

4:30pm - 6:00pm

Follow-up Workshop

“Measurement Specifications Review”, Dave Card, Software Productivity Consortium

This review is intended for those who have drafted sample measurement specifications for the PSM web site. 1-on-1-review time will ensure that the specifications include the necessary information before posting on the web.

Thursday, 27 March 2003

7:30am - 8:00 am Sign-in, Coffee

8:00am - 12:00pm **Concurrent Workshops** (see details in the back of document):

#1 - "Measurement of Safety and Security Processes"

Workshop Leads:

John Murdoch, University of York, UK

Paul Caseley, Defense Science Technologies Labs, MOD, UK

#2 - "Enterprise Measurement Framework" (1/2 day only)

Workshop Leads:

Scott Lucero, US Army Technical Evaluation Center

Dave Zubrow, Software Engineering Institute

#3 - "Measurement in the Rational Unified Process"

Workshop Leads:

Doug Ishigaki, Rational Corporation

John Riedener, US Army TACOM-ARDEC

12:00pm - 1:00pm Lunch on your own (cafeteria downstairs)

1:00pm - 5:00pm **Concurrent Workshops** (see details in the back of document):

#1 - "Measurement of Safety and Security Processes"

(continuation of morning session)

#3 - "Measurement in the Rational Unified Process"

(continuation of morning session)

#4 - "Measurement of System of Systems" (1/2 day only)

Workshop Leads:

Robert M. Flowe, Defense Acquisition University, Fort Belvoir, VA

Martha Spurlock, Defense Acquisition University, Fort Belvoir, VA

Robert Skertic, Defense Acquisition University, Fort Belvoir, VA

(AM and PM Breaks As Appropriate)

5:00pm ***Adjourn***

Workshop #1: Measurement of Safety and Security Processes

Date: 19 March 2003

Time: 8:00am - 5:00pm

Facilitators: John Murdoch, University of York, UK
Paul Caseley, Defence Science Technologies Laboratories, MOD, UK

Prerequisites

Workshop attendees should be aware of FAA-iCMM and CMMI and the proposed integrity assurance practices. An awareness of security and safety processes is also desirable. A practical knowledge of applying measurement programs is highly desirable. Any delegate with experience of applying measurement to novel, or new, system processes would likely provide useful insights.

Materials to Bring

Knowledge and/or information of what safety and security processes are measured on any project or service.

Discussion:

The group will discuss whether it is practical to have process improvement measures for security and safety processes. The identification of useful attributes and entities for safety and security process measurements will be a major topic of discussion. Peer group analysis of the measures to see if they provide effective measures effort, effectiveness and quality of safety and security processes. Further discussion on how process measures aid and support of the proposed FAA-iCMM and CMMI extensions. Some points which may get discussed:

- Why counting threats/hazards is not useful
- When are the security/safety processes most effective in design?
- How much does safety and security really cost a project?
- Are the existing generic or identified safety and security measures useful.
- How these measures will map into PSM 4b.

Note: This should not be confused with how the safety of a system is measured and justified using the evidence supplied by the products of safety processes.

Goals/Products

The goals of this workshop are:

- Identify generic information needs for safety and security
- Identify and document potential measures for system I-C-M tables

Workshop #2: Enterprise Measurement Framework

Date: 19 March 2003
Time: 8:00am - 12:00pm
Facilitators: Scott Lucero, US Army Technical Evaluation Center
Dave Zubrow, Software Engineering Institute

Prerequisites

Workshop participants should be knowledgeable of enterprise level management information needs, issues and goals. Individuals with experience preparing measurement reports for executive level management would be welcome. Workshop participants with experience in managing an enterprise or multiple programs are also welcome. Participants should be willing and able to share specific experiences and knowledge.

Materials to Bring

Sample enterprise level reports or templates.
Able body
Sharp mind

Discussion:

This workshop will begin to produce a framework for enterprise level measurement of acquisition. As an initial effort in this area, the discussion will focus on the following questions:

- What are the enterprises?
- Who are the stakeholders for system acquisition within the enterprises?
- What are their information needs?
- What are the existing sources of information available to the stakeholders?

Note that the focus of this workshop is at the enterprise level, not the level of individual programs or projects; the information needs and measures will be somewhat different than those found in the PSM ICM tables.

Goals/Products

The goals of this workshop are to:

- Develop a list of relevant enterprises
- Develop a list of stakeholders for a single enterprise
- Develop a candidate list of information needs for the stakeholder set
- List of existing sources of information available to stakeholders and the information need(s) that the sources address

Workshop #3: Measurement in the Rational Unified Process

Date: 19 March 2003
Time: 8:00am - 5:00pm
Facilitators: Doug Ishigaki, Rational Software
John Riedener, US Army TACOM-ARDEC

Prerequisites

Workshop attendees should have an understanding of Rational systems, with usage of the Rational Unified Process (RUP) an asset.

Materials to Bring

Knowledge and/or information of measures based on data collected from Rational systems.

Discussion:

The Rational Unified Process (RUP) is a software engineering process. It provides a disciplined approach to assigning tasks and responsibilities within a development organization through a process framework consisting of guidelines, workflows, templates, examples, and tool mentors.

Included in the RUP process framework is the project management workflow. Measurement can be and should be an integral part of the workflow. Monitoring and controlling (through measurement) is performed throughout the complete lifecycle of the project, including managing iterations and phases as well as managing scope and risks.

This workshop will discuss opportunities for measurement in the Rational Unified Process, including available data and relevant tasks.

Goals/Products

The goals of this workshop are:

- Identify opportunities for measurement using RUP, including available data and relevant tasks.
- Discuss RUP roles related to measurement
- Identify candidate measures for RUP
- Identify recommended enhancements to the RUP process to facilitate measurement opportunities, including screens to be updated
- Identify candidate field trial sites for validating the RUP measurement enhancements

Workshop #4: Measurement of System of Systems

Date: 19 March 2003

Time: 12:00pm - 5:00pm

Facilitators: Robert M. Flowe, Defense Acquisition University, Fort Belvoir, VA
Martha Spurlock, Defense Acquisition University, Fort Belvoir, VA
Robert Skertic, Defense Acquisition University, Fort Belvoir, VA

Prerequisites

Workshop attendees should have a general understanding of systems acquisition, systems engineering, and systems architectures, particularly with respect to interoperability, and integration issues. Understanding of parametric cost analysis, statistical analysis methods, and development of cost estimating relationships is desirable.

Materials to Bring

Knowledge and/or information of system-of-systems integration efforts, sources of data, experiences and insights.

Discussion:

The facilitators will discuss ongoing DAU-sponsored research dealing with identifying the sources and drivers of cost, schedule, and acquisition risk in system-of-systems acquisitions. The premise is that acquisition of system of systems changes the nature of the effort from primarily one of development to one of systems integration. Systems integration is substantially different from systems development and may require new measurement approaches to obtain the necessary insight to predict and manage acquisition outcomes. The focus of this workshop is to identify candidate measures relevant to the prediction of system-of-systems acquisition outcomes.

Goals/Products

The goals of this workshop are:

- Identify categories of information needs for system-of-systems acquisition
 - Identify and document potential measures for system-of-system I-C-M tables
- Identify candidate system of systems programs or descriptions (articles) for follow-up discussions