ISO/IEC 15939 - Software Measurement Process Framework

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Agenda

- ***Background***

- ***Overview of 15939 Approach***

- ***Relationship to Other ISO Standards***

- ***Comparison with PSM***

- ***Summary***

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Background

Motivation

- **Measurement described inconsistently in existing engineering standards**

- **Several disjoint measurement standards**

- **Need for common terminology and framework to communicate measurement information increasing as measurement usage increases**

    - *internally by producers*

    - *in contractual situations by acquirers*

Standards Process

- *Organization*
  - *JTC1/SC7 (Francois Coallier, Bell Canada)*
  - *Working Groups (WG13 - Jack McGarry, NUWC)*
  - *National Bodies (USTAG - Leonard Tripp, Boeing)*
- *Life Cycle*
  - *Work Item*
  - *Working Draft*
  - *Committee Draft*
  - *Standard*

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15939 Milestones

- *May 1997 - Work Item Proposed*
- *November 1997 - Preliminary Working Group 13 Meeting*
- *May 1998 - First Working Group 13 Meeting; Working Draft Developed*
- *November 1998 - Next Scheduled Working Group 13 Meeting*

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Participating Nations

- *Australia*

- *Canada*

- *Germany*

- *Ireland*

- *South Africa*

- *Sweden*

- *United Kingdom*

- *United States*

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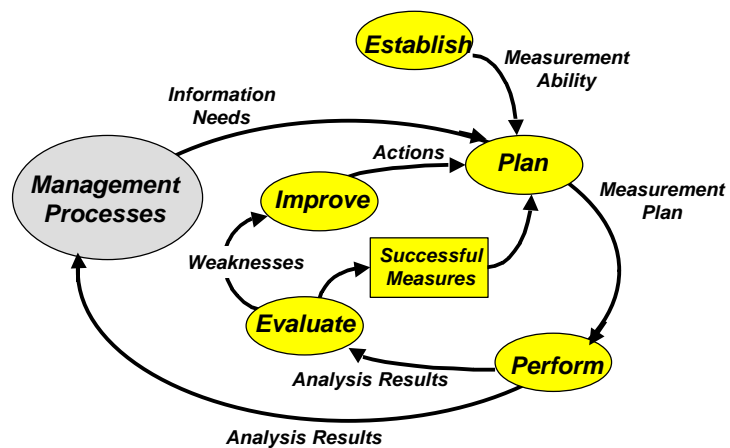# *Overview of 15939 Approach*

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Measurement Process

- *12207 Process Terms*
  - *Process (e.g., Measurement)*
  - *Activity (e.g., see below)*
  - *Task*
- *15939 Activities*
  - *Establish and Maintain Measurement Capability*
  - *Plan Measurement*
  - *Perform Measurement*
  - *Evaluate Measurement*
  - *Improve Measurement*

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Process Architecture

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Establish and Maintain Measurement Capapbility

- *Establish commitment*
  - *scope of effort*
  - *buy-in of affected parties*
- *Assign/obtain competent resources*
  - *personnel*
  - *training*

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Plan Measurement

- *Identify information needs*
- *Prioritize information needs*
- *Identify candidate measures*
- *Select measures*
- *Define evaluation criteria*
- *Develop measurement plan*
- *Acquire and install tools*

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Perform Measurement

- *Collect data*

- *Process and verify data*

- *Analyze and interpret data*

- *Communicate analysis results*

Evaluate Measurement

- *Assess effectiveness of measurement process*
  - *use criteria identified in planning*
  - *identify opportunities for improvement*
- *Assess effectiveness of measures*
  - *use criteria identified in planning*
  - *identify successful measures*

Improve Measurement

- *Capture lessons-learned*

- *Select process and measurement improvements*

- *Update measurement plan*

In addition to updates to the measurement plan driven by the changing information needs

Document Outline

- *Scope*

- *Normative References*

- *Definitions*

- *Application of the Standard*

- *Description of the Activities*

- *Tailoring Process*

- *Reporting Guidelines*

- *Measure Evaluation Criteria*

- *Process Evaluation Criteria*

Relationship to Other
ISO Standards

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Relevant Standards

- *Software Life Cycle Processes - 12207*

- *Software Process Assessment - 15504*

- *Software Measurement*

  - *Software Quality - 9126*

  - *Functional Size Measurement - 14143*

  - *Others*

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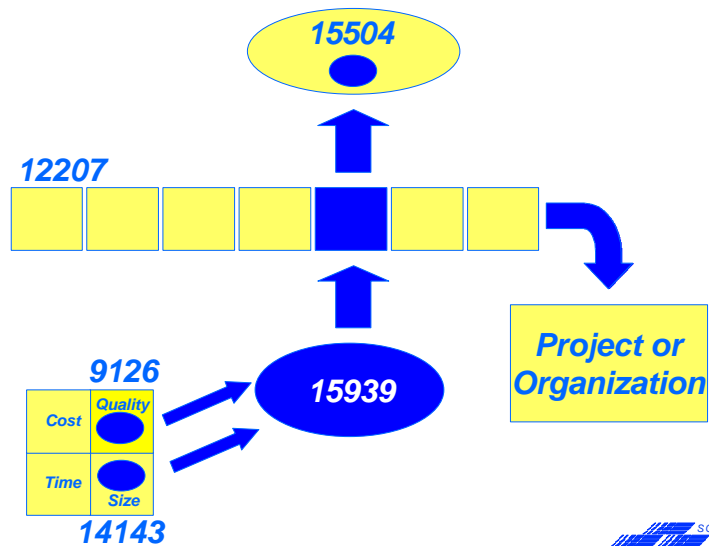# Key Concerns

- *Consistent Terminology*

- *Common Architecture/Logical Relationships*

- *Minimize Redundancy*

- *Interface Agreements Must Negotiated Among Multiple Working Group and National Interests*

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Integration Approach

15504

12207

9126

Cost	Quality
Time	Size

14143

15939

Project or Organization

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Comparison with PSM

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Similarities and Differences

- **Both are flexible approaches driven by information needs**

- **Establish, Plan, and Perform are similar to PSM Tailor, Apply, and Implement**

- **"Successful Measures" cache is similar to PSM Measurement Tables**

- **PSM does not specifically address the Evaluate and Improve activities, although they are implied by other activities**

- **PSM provides more detail in areas it covers**

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Summary

Going Forward

- *PSM users are already largely compatible with the planned standard*

- *Standards development is a deliberate process*

- *Standards development is an open process*

  - *active participation in the working group is encouraged*

  - *comments on draft materials are solicited through the national bodies*

For More Information

www.iso14001.net/iso15939