



Software Process Engineering Activities in Québec

Montréal SPIN

•Networking

- **Ottawa SPIN**
- **Toronto SPIN**
- **International Council on Systems
Engineering (INCOSE) Chapter in Montréal**
- **Metrics Interest Group (CIM)**

Montréal SPIN

**Established in 1993 by Founding Members of the
Applied Software Engineering Center (ASEC):**

**Bombardier Inc.
CAE Electronics Ltd.
Lockheed Martin Canada
Oerlikon Aerospace

and Hydro Québec**

Montréal SPIN

Its mission:

**Facilitate the understanding, the adoption, and the
deployment of proven or innovative solutions for
software process improvement.**

Montréal SPIN

- **Activities:**

- Presentations
- Workshops
- Projects (Function Points for R-T Systems)

- **Typical subjects:**
 - CMMs: SW, SE, People.
 - Sessions for Managers
 - Sessions for Executives
 - Configuration Management
 - Management of Change
 - International Standards
 - Benchmarking
 - Case Studies from Industry

Montréal SPIN

- **Speakers at SPIN Meetings:**

Larry Druffel, SEI
Jeff Perdue, ISPI
Bill Curtiss, SEI
Bob Charette, Ithabi Corp.
Ron Radice, SEI
Raymond Dion, Raytheon
Jim Fritsch, Motorola
Frank McGarry, NASA
Lt. Col. Mark Lewis, US Air Force
Suzie Garcia, SEI
Raghu Singh, US Dept. of Defense
Joe Puffer, Arthur D. Little Inc.

Montréal SPIN

- **Vision 96 Symposium- October 7-10.**
 - **Systems and Software Process Improvement**
 - **Tutorials**
 - **Sponsored Tracks from SEI and INCOSE**
 - **Tracks: Aerospace and Defence**
Transport
Utilities & Telecommunications
International
Risk Management
Management of Change
Academia
Methods, Models and Tools

Montréal SPIN

- **Vision 96 Symposium**
 - **230 Participants**
 - **9 Countries: Australia**
Austria
Canada
Chile
France
Germany
Ireland
Korea
USA

Capability Models Development Activities in Québec

- **Trillium**
- **Trillium-Camélia**

Capability Models Development Activities in Québec

- **Trillium**
 - **Developed by Bell Canada, Nortel, Bell Northern Research**
 - **To assess telecommunication system suppliers**
 - **Based on CMM, ISO, Bellcore, IEEE and Malcom Baldrige National Quality Award**
 - **Key process areas vary on a five-level scale**

Capability Models Development Activities in Québec

- **Trillium-Camélia**
 - **France-Québec project started in 1992**
 - **Translated in French**
 - **Adapted Trillium to information systems sector**
 - **Business process re-engineering**
 - **Architectures**
 - **Financial life-cycle**
 - **Assessment method based on CBA IPI**
 - **Model should be published early 97**

First Experiment with the Maturity Model

- **Workshop in 1989**
 - **Conducted by Two Members of the Technical Staff of the SEI**
 - **Over 50 Participants**
 - **Results compared with US Workshops**
 - Data:**
 - Level 1 : 93 %**
 - Level 2 : 7 %**

Process Improvement Experiences in Québec

- **CMM Based Improvements**

- **CAE Electronics - Fighter Aircraft Maintenance**
- **Lockheed Martin Canada**
- **Hydro-Québec - Automatization Group**
- **Oerlikon Aerospace**
- **Montréal Trust (Scotia Bank)**
- **CAE Electronics - Energy Control Dept.**
- **Hydro-Québec - Research Institute**

Process Improvement Experiences in Québec

- **CMM Based Improvements**

- **IST Group**
- **Ericsson**
- **Canadian Marconi Company**
- **Québec Government- Health Insurance**
- **Bombardier- Mass Transit Division**

Some Lessons Learned

- **Set Realistic Expectations for Senior Management**
- **Secure Management Support**
- **Establish a Software Process Engineering Group**
- **Start Improvement Activities soon after Assessment**
- **Train all Users on Process, Methods and Tools**
- **Manage the Human Dimension of Improvement**
- **People Skills are Required**

Some Lessons Learned

- **People Skills are Required**
 - **Profile of ideal chair of SEPG**
 - **Major in social work and minor in software engineering**
 - **Culture change from “command and control” to participative mode**
 - **Provide “safety nets”**
 - **It is ok to make mistakes if we learn**
 - **Results of inspection are confidential**

Le Bastion

- **Based on the concept of SMART CITIES**
(Systems Management And Resources Training for a Center of Information Technology Innovations in Education and Systems)
 - Establish a Software and Systems Engineering Center of Excellence in collaboration with organizations such as ASEC, SEI, SPC.
 - Develop a Software and Systems Engineering Graduate Program (in collaboration with existing universities).
 - Compete to win projects in the new economy

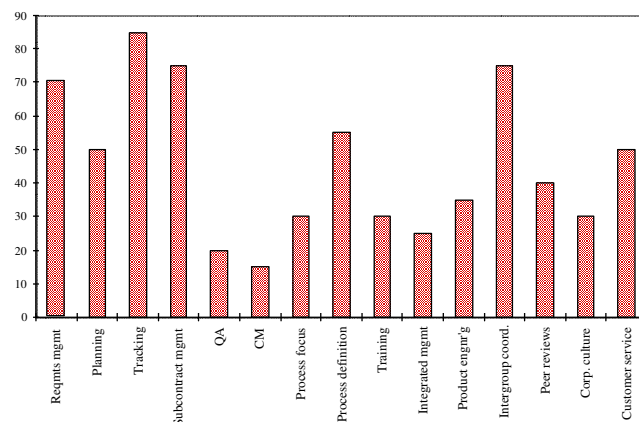
S:PRIME

- **S:PRIME: Software Process Risk Identification, Mapping and Evaluation**
- Based on the SEI work on Taxonomy-Based Risk Identification and on the Capability Maturity Model (CMMsm) augmented with elements of customer service and corporate culture
- Assessment method developed in collaboration with the Applied Software Engineering Centre (ASEC)
- Identification, assessment and management of process-related risks in software projects and in organizations, as a function of currently implemented practices

S:PRIME

- **Fast and relatively inexpensive (15 to 25 person-days)**
- **Technology transfer to the assessed organization on completion**
- **Method has been translated in Spanish**
- **Over 22 S:PRIME assessments have been conducted in Canada, France and Chile**

S:PRIME - Assessment results



RISK ASSESSMENT FOR INVESTMENTS DECISIONS

- **Telsoft Ventures Inc.**
 - **Software Venture Capital Fund - 78.2 Million \$ (CA)**
 - **Process Maturity Assessments:**
 - **Mini-assessment before investment decision**
 - **Part of a multi-facet risk assessment**
 - **Detailed joint assessment once decision is made:**
 - **Trillium-based assessment**
 - **Improvement plan is defined and executed**
 - **Re-assessments at 6-month intervals**

Process Engineering at Oerlikon Aerospace

- **Software Engineering Improvement Effort**
 - **Software Process Assessment (SPA) in 1993**
 - **Level 2 and 3 practices developed and implemented**
- **Systems Engineering Improvement Effort:**
 - **Self-Assessment using Systems Engineering CMM in 95**
 - **SPC's Tailorable Systems Engineering Process is used**
 - **Technical activities have been defined**
 - **Management activities are being defined**
 - **Pilot Projects are using beta version of the SE process**
- **Integration of Systems Engineering Process to Software Engineering Process (Products, Methods and Tools)**