The Network of Centers for Very Small Entities (VSEs)

Washington, USA
November 4th, 2010
ISO/IEC JTC 1/SC 7- Working Group 24
Agenda

1. Overview of activities
   • Argentina, Brazil, Columbia, France, Ireland, Japan, Mexico, Peru, Thailand, Canada

2. Deployment Packages
   • Entry (draft) and Basic Profiles

3. Publications and Communications

4. Varia

5. Systems Engineering for VSMEs

6. Next Steps
ISO/IEC 29110 in Argentina

Paula Angeleri
(Delegate to JTC1/SC7/WG24)
Current situation

• IRAM (National Standardization Body) is interested in ISO/IEC 29110 certification.

  Action already done:
  – Conferences with IT companies Clusters and government for promoting it
  – Had asked Industry and VSE Secretary to include COMPETISOFIT in Software Law regulations (COMPETISOFIT and ISO/IEC 29110 derived from Mexican MoProSoft Model),
  – Had asked SEPYME (VSE’s Office) to include ISO/IEC 29110 in subsidies offered to VSE’s companies for implementing quality standards
  – Intention to ask the Industry Secretary to include ISO/IEC 29110 in Software Law regulations as soon as it is published
Current situation

- In contact with OAA (Organization of Accreditation of Argentine) for accreditation schemes in Software Engineering

Academics:
- Graduate student developed a draft of the Entry Profile
- ISO/IEC 29110 in curricula of Software Quality graduate course at University of Belgrano
- Presentations made at undergraduate levels in Information Systems and Informatic Engineering in University of Belgrano
Current situation

Industry

• Some VSE companies implemented COMPETISOFT model (similar to ISO/IEC 29110 Advance profile)
• Medium to Large organizations asked for CMMI Model. None was evaluated with ISO/IEC 15504 taken ISO/IEC 12207 as a process reference model.
References

- I did not have the time to look for references.
  - I am writing facts that I know by working at IRAM and by being a professor at University of Belgrano (having organized conferences and presentations about ISO/IEC 29110 and promoting its inclusion in the academic curricula).
- Data from Software industry is approximately, according to my knowledge.
Expertise

✓ Project’ elaboration to achieve financial support to enterprises
✓ Processess Improvement Implementation (ISO, MPS.BR, CMMI)
✓ Capacitation and Training
✓ Appraisals (MPS.BR in all levels and partnership to CMMI in all levels)
✓ Organization groups to perform projects with related purpose
MPS.BR Brazilian Program

ISO/IEC 12207
ISO/IEC 15504
CMMI

Reference Model
(MR-MPS)

Assessment Model
(MA-MPS)

Business Model
(MN-MPS)

General Guide
Acquisition
Guide
Assessment
Guide
Program
Documents
What are we doing?

✓ National body participation
  ✓ ISO/IEC 12207 in 21-007.07
  ✓ ISO/IEC 15504 in 21-007.10
  ✓ WG24

✓ Actions ongoing
  ✓ Formation groups for MPS.BR implementation
  ✓ Formation groups for ISO/IEC 9000 certification

✓ Working on
  ✓ Formation groups for ISO/IEC 20000 implementation
  ✓ Mapping ISO 29110 to MPS.BR
  ✓ Formation groups for ISO 29110
Some indicators

✓ Some MPS Program indicators
  ✓ More than 240 assessments successfully executed
  ✓ More than 30 groups formed

✓ Some RIOSOFT indicators
  ✓ More than 100 enterprises supported (implementations and assessments)
  ✓ More than 15 groups formed (ISO, CMMI and MPS.BR)

✓ Education of Enterprises
  ✓ MBA in IT Management
  ✓ Post Graduate in Software Engineer
  ✓ Appraisers and implementers MPS.BR training
  ✓ CMMI and MPS.BR Training (Introduction)
  ✓ Specific Technical Training
Pilot Project & Other activities Underway in Colombia

- National Body commitment
- 2 Universities involve (Master Degree Programs)
- 3 Master Students involve
- 3 Pilots Projects to start on January
- Colciencias (gov.) & ParqueSoft
- 2 Master Students involved
- Reviewing or redefining to propose other DPs
Pilot Project & Other activities Underway in Colombia

• **Big Opportunity 2011:**

- More than 1000 SE (Small Enterprises), 94~VSE
- 120 in ParqueSoft
- Gov. Commitment

**QUALITY COLOMBIAN NETWORK FOR DEVELOPMENT OF INFORMATION AND COMMUNICATIONS TECHNOLOGIES**

1 Project: CMMI-Dev. $US1M (Done)
2 Project: CMMI-SVR (presented)
3 Project: 29110? (to be defined)
France - A pilot project on support processes

- A 14-person company (3 software developers) building and selling counting systems about the frequation levels of public and private sites.
- The VSE started a complete reconstruction of its software into a web-based system. The VSE reported frequent software crashes and ask assistance.
- A pilot project to establish a robust and perennial technical architecture
  - The VSE’s employees were provided with transfer cards intended to help the VSE to build its own support tasks.
  - Structure of a transfer card:
    - Reference to the 29110 : Process / Activity / Task – Role
    - Step-by-step description intended to be a practical guide to complete the task.
    - Output products are generally a usage or an installation guide.
- 2 results :
  - Infrastructure management is an example of support processes which are neither management processes nor implementation processes, but support processes.
  - Proposition of a draft of an “Infrastructure & Support” (IS) process for the Intermediate or Advanced profiles.
  - Tasks :
    - Infrastructure Management : Establish the infrastructure; Maintain the infrastructure.
    - Experience Management : Establish an experience repository; Gather knowledge and experience; Provide access to experience
Pilot Projects Underway in Ireland

• Pilot projects
  – Datakraft (7 people) using the PM DP only.
    • Still discussing future plans
  – GS (20 people) cancelled
  – All4One (3 people) cancelled

• Marty
  – Anticipate 2 new pilots to start January 2011
Pilot Projects Underway in Ireland

• Process Guide
  • Created a simple HTML/Windows help system
  • Purpose: To prototype an interactive PG/PAL with embedded links to templates
    – Hope: Easy navigation of part 5
Pilot Projects Underway in Ireland
Pilot Projects Underway in Ireland

Basic VSE Profile Project Management

Description

- Define high-level requirements and the scope of the application based on the operational vision and business objectives, and confirm what is intended to be in the application and what is not.
- Define a change plan to enable people and the organization to operate the new capability.
- Estimate the overall cost and schedule for the entire project.
- Select the major use cases of the application—the primary scenarios of operation that will drive the design effort.
- Estimate potential risks due to uncertainty with the solution's difficulty, complexity, and feasibility.
- Define the strategies for developing, testing, piloting, and deploying the application to the customer.
- Define the resourcing strategy to ensure the project has the right skills to deliver the application.
- On completion of the planning stage transition the planning tasks to the Technical Lead.
- Define a strategy for liaising with the customer at different stages of the project and for product handover.

Roles
Pilot Projects Underway in Ireland

Template:

Project Plan Template, opensource by Karl E. Wiegers, http://www.projectinitiation.com/

Volume: One per project

Where Created or updated: Project Planning and Project Plan Execution
Pilot Projects Underway in Ireland
SPINACH Self-disciplined SPI Method
- A Motivation-Based Improvement

Progress Report
SPINACH Self-disciplined SPI Method
International Version Prepared

• Japanese version is now being developed with about 50 work sheets.
• Japanese version will be expanded to user-side process in the next year.
• Internationalized version will be based on 29110 processes. The first translation/tuning will be performed in this winter with 10 or so work sheets.
• International version is to be a kind of component of VSE deployment package.
VSE Deployment News

• In coming WOCS 2011 (Workshop on Critical Software), SRA Inc. (a major software company in Japan) will have a presentation on their pilot application experience of 29110 to their own processes.
  – WOCS is co-sponsored by JAXA and IPA.
    • JAXA: Japan Aerospace Exploration Agency
    • IPA: Information-technology Promotion Agency, Japan
Master Project

- Javier Flores & Hanna Oktaba & Claude Laporte

Objective

- To assess the Deployment Packages for Project Management and Construction and Unit Testing as self-taught tools for software process improvement in VSE, and check their understanding, ease of use and usefulness.
In Progress

• Translation of 29110-5-2-1 in Spanish
  – First draft
COMPETISOFT Project

• Start COMPETISOFT Project in 2007-2010
• 20 VSEs involved
• Established Mexican Standard - MoProSoft as National Peruvian Standard
• New Peruvian Standard is numbered as 291.100 (for future migration to ISO/IEC 29110) May-2009
Start cMoProsof – FINCYT funding

- COMPETISOFT 3rd Phase Mar/2010-Feb/2011
- Prepare and test a Certification Scheme (CS).
  - Use ISO/IEC Product Scheme 65
  - Use a 15504-2 and EvalProSoft (NTP-291.100 – 4) (normative)
  - Certification Body: Quality Institute from Catholic University (IC-PUCP)
  - Adjust PAM for MoProSoft according to ISO/IEC 15504-2.
  - Apply System Certification in 1 company
  - Fix the final version of all forms and procedures
  - In progress: prepare two expedients to get recognition from national accreditation body (INDECOPI)
- Certifications.
  - First company certified in August 2010.
  - Two more in November 2010

2011-05-30
Step to get Certification Scheme (CS)

1. Prepare assessors in ISO/IEC 15504
2. Extension of a Certification Scheme of IC-PUCP (they already had it for other products)
3. Adapt template forms of Certification Scheme (from Paper Certification Scheme)
4. Modify/Extend Certification System (including MoProSoft as a new CS)
5. Prepare forms to use in a Certification Process on MoProSoft (NTP 291.100) CS
6. Prepare a PAM for NTP 291.100 (MoProSoft); P. Rodriguez participates in this activity
7. Test system, procedure and forms of MoProSoft CS.
VSE Activities

1. Introduce VSE model as a Guide (software engineering course at PUCP)
2. Use Guide model to check implementation
3. Extend a VSE-Certified Scheme with IC-PUCP
ISO/IEC 29110 Activity in Thailand

ISO/IEC 29110 Implementation

VSE Implementation

Government Implementation

Education Implementation

Infrastructure

Supporting Data Center

Assessment Data Center

VSE Networks

Marketing

Standardization

Certification Body

Supporting tools

Assessor/ Consultant Training

ISO/IEC 29110 Progress of ISO/IEC 29110

2011-05-30
124 VSEs Implementation Area

1 Bangkok
2 North area
3 Northeast area
4 East area
5 South area (Phuket)

Thailand Progress of ISO/IEC 29110

2011-05-30
124 VSEs Implementation Cluster

1. Customized Software
2. ERP targeted for large Enterprises
3. On-shelf software package
4. Animation and Multimedia
5. Consultancy and Services
6. Embedded Software
7. Mobile Application Software

Thailand Progress of ISO/IEC 29110

2011-05-30
Government Implementation

Government Procurement with ISO/IEC 29110 Seminar

More than 350 attendees!

Ministry of ICT

Education Implementation

Criteria for IS (Independence Study) project for complete a Master of science program in software engineering

ChiangMai University
## Assessment Data Centre

### Assessment Management System
Innova Foundation Certification Body

#### Main Menu
- Home
- Company Registration
- Assessment Registration
- Activity Assignment
- Document validation
- Assessment Process
- Certificate Process
- Logout

### Document Validation

<table>
<thead>
<tr>
<th>Check document</th>
<th>View document</th>
<th>Complete</th>
<th>Incomplete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Documents and requests for certification auditing ISO / IEC 29110.</td>
<td>Check Document</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Documentation. ( INF-ASM-402 )</td>
<td>Upload Document</td>
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<td></td>
</tr>
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<td>Copy of Commercial Registration.</td>
<td>Upload Document</td>
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<td>A copy of the Partnership and Company Registration Office.</td>
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<tr>
<td>Copy authorized documents.</td>
<td>Upload Document</td>
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[![save, cancel](image)](image)
Supporting Centre
(www.center4vse.net)

HISTORY LINE

Thailand industry recognizes very small entities-VSE for their valuable products. As software quality increasingly becomes a subject of concern, and as process approaches are maturing and earning the confidence of companies, the use of ISO international standards is distributing in organizations of all sizes. However, these standards were not written for VSE and are consequently difficult to apply in such
International Networks for VSE

• Meetings in 6 countries (China, Chile, Malaysia, Japan, Germany and Netherlands) funded by APEC and SIPA.

• The meetings focused on the promotion and collaboration on implementation of software development process including co related activities by international partners.

• Main targets focused on SW developers, supporting org. both in private and public sectors, education sectors, software users.

• Expectations needed from the meeting are the opportunity to communicate each other, to create the collaboration among countries in the future to set VSE promoting activities.

• In Thailand, APEC Software Business Networking Workshop for SME and VSE funded by APEC
Certification Body

National Accredited Council

Certificated Body

Consultant

Entrepreneurs

Inspection Body

Outsource

Certify

Consult

Inspect and Report

Scheme Owner

2011-05-30 Thailand Progress of ISO/IEC 29110
ISO 15504 Assessor/Consultant Training

15 assessors
Pilot Projects Underway in Canada

• **Telecommunication Research Chair**
  – Implementation of 29110 Draft Entry/Basic Profiles processes for Master and PhD students
  – Most projects are conducted by 1 graduate student

• **Research Laboratory in Medical Imagery and Orthopedic**
  – Implementation of 29110 Draft Entry/Basic Profiles processes for Master and PhD students
  – Most projects are conducted by 1 graduate student

• **Start-up Company**
  – Capstone project conducted by 2 senior software engineering students
    • Using the Draft Entry Profile and Draft French Deployment Packages
Pilot Projects Underway in Canada

- **Software Engineering Graduate Students**
  - Process Improvement Course for professional students

- Intervention in an organization over a 12 week-timeframe using the Draft 29110 Entry Profile:
  - Acme Engineering Consulting in the Energy Domain
    - Develop a process for small engineering projects
  - Acme Public Health Services
    - Collect and analyze data and publish statistics about the health of population
    - A large commercial methodology has been imposed, since then almost no software has been delivered
    - The objective is to develop a ‘usable’ process
  - Acme Finance services
    - Start-up VSE of 6 employees (3 software developers)

* In each team, one student is a staff of the Organisation
Pilot Projects Underway in Canada and Haïti and Chili

• **Pilot projects in Montréal and Haiti**
  - Graduate student from Haiti
  - Learns and implements a 29100 process in VSE in Montréal
  - Implements a 29110 process in a VSE in Haiti

• **Pilot Projects in Montréal and Chile**
  - Graduate student from Chile
  - Learns and implements a 29110 process in VSE in Montréal
  - Implements a 29110 process in a VSE in Chile
  - Evaluates the impacts of the 29110 standard on VSE
Basic Profile - Update

• Deployment Package (DP)
  – Updated ‘Architecture and Detailed Design’ DP
    • [link](http://profs.etsmtl.ca/claporte/English/VSE/Deploy%20Pack/Deployment_Software_Design_v0%204.doc)
    • DP will be used in a Software Engineering Design course in January 2011 at ÉTS

• Plug-ins
  – On plug-in supports the Design DP
    • [link](http://profs.etsmtl.ca/claporte/English/VSE/Deploy%20Pack/29110-5-1-2-Design_Plugin.zip)
  – One plug-in covers the complete Basic Profile *
Basic Profile – Plug-in

Welcome to the ISO/IEC 29110 Basic profile.

Main Description

ISO/IEC 29110, targeted by audience, has been developed to improve product and/or service quality, and process performance (see table 1). This is a web implementation of the ISO/IEC 29110 Basic Profile to facilitate the implementation of the ISO/IEC 29110 standards and the set of Deployment Packages.

<table>
<thead>
<tr>
<th>ISO/IEC 29110</th>
<th>Title</th>
<th>Target audience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part 1</td>
<td>Overview</td>
<td>VSEs</td>
</tr>
<tr>
<td>Part 3</td>
<td>Assessment guide</td>
<td>Assessors and VSEs</td>
</tr>
<tr>
<td>Part 4</td>
<td>Profile Specifications</td>
<td>Standards producers, tool vendors and methodology vendors. Not intended for VSEs.</td>
</tr>
<tr>
<td>Part 5</td>
<td>Management and engineering guide</td>
<td>VSEs</td>
</tr>
</tbody>
</table>

Table 1 — ISO/IEC 29110 Target Audience

The basic profile describes software development of a single application by a single project team with no special risk or situational factors. The project may be to fulfill an external or internal contract. The internal contract need not be explicit between the project team and their client.

Entry Profile (Draft)

• Deployment Packages (English and French versions)
  – Project Management (English)
  – Software Implementation (English)
    • http://profs.etsmtl.ca/claporte/English/VSE/Deploy%20Pack/Entry%20Profile -DP-Software%20Implementation_01CL.doc

• Plug-in (English)
  – One plug-in covers the 2 DPs
Entry Profile (Draft) – Plug-in

http://profs.etsmtl.ca/claporte/English/VSE/Deploy%20Pack/EntryProfile.zip
29110 Public Web Sites

- CETIC has offered to host a public web site (January 2011)
- Finland (operational in December 2010)
- Other Public Sites?

One web site in operation since 2006 at ÉTS

http://profs.logti.etsmtl.ca/claporte/English/VSE/index.html
Publications - Communications

• To date
  – EuroSPI 2010
    – Software Engineering Support Activities for Very Small Entities
  – Profess 2010
    – Towards the Provision of Assistance for Very Small Entities in Deploying Software Lifecycle Standards
  – ICSEA 2010
    – Experience Management for Very Small Entities: improving the copy-paste model

• Planned
  – IT Standards Journal (to be submitted)
  – SPI Book Chapter (accepted)
  – Book (to be published in 2011)
    – International IT Standards for Very Small Organizations Developing Software (Éditions Universitaires Européennes (German Editor))
Systems Engineering for VSMEs

• Project done under sponsorship of INCOSE/AFIS
  – INCOSE: International Council on Systems Engineering

• Goals
  – To improve or make product development efficient by using Systems Engineering methodology
  – To elaborate tailored practical guidance to apply to VSMEs in the context of prime or subcontractor, of commercial products
  – To contribute to standardization

VSMEs stands for Very Small and Small Entities or Enterprises
Survey of Systems Engineering for VSMEs and Small Projects

VSMEs:
Small Entity = 50 staff or less
Micro Entity = 10 staff or less
Source: EC Enterprise and Industry Report
How to Participate

• Fill Out and Submit On-Line Survey
  – http://isosurvey.logti.etsmtl.ca/
  – Results of Survey Published Anonymously to Participants

• Contribute to Project Plan definition, if Desired

• Participate in WG, if Desired
  – Network With Other VSMEs and Experts
  – Define Guidance and Good Practices
Varia

• Certification/Recognition Schemes
  – Working together to develop a Draft ‘DP’

• Development of video clips
  – Purpose, topics, etc.

• 29110 on Wikipedia
  – Text will be published after the standards get published by ISO

• Development of self-learning modules
  – e.g. Overview of ISO/IEC 29110

• Using the new Economic benefits of standards Methodology Handbook in pilot projects
Next Steps

• Agile implementation
  – Produce a “GUIDE” that describes the implementation of Part 5
  – Provide an Agile view of PM and SI