

Network of Centers for Very Small Entities (VSEs)

Montréal, Canada November 30th, 2013 ISO/IEC JTC 1/SC 7- Working Group 24

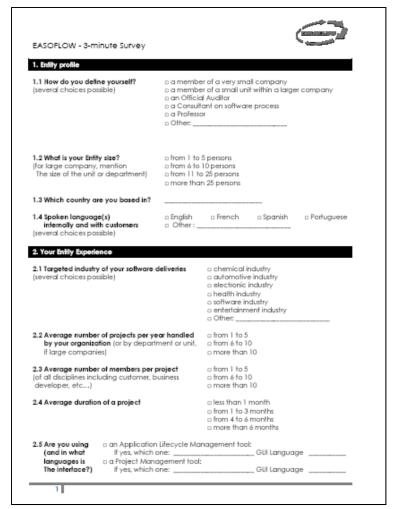


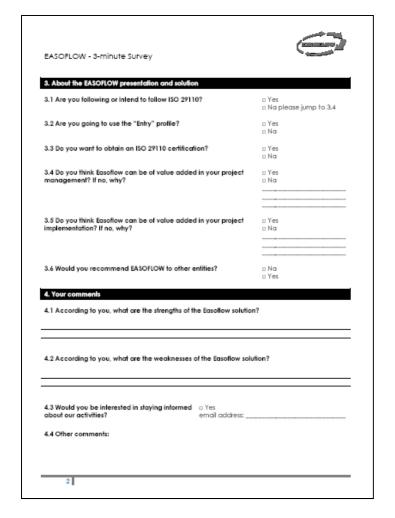






Belgium





http://survey.cetic.be/iso29110/english http://survey.cetic.be/iso29110/french



ISO/IEC 29110

ABNT NBR ISO/IEC 29110





29110 is already a brazilian standard...

NBR ISO/IEC 29110-2

First edition 2011-01-15

Engenharia de Software — Perfis de Ciclo de Vida Para Micro-organizações (MOs) — Parte 2: Estrutura e taxonomia

Software engineering — Lifecycle profiles for Very Small Entitles (VSEs) — Part 2: Framework and taxonomy

Ingénierie du logiciel — Profils de cycle de vie pour très petits organismes (TPO) — Partie 2: Cadre général et taxinomie

NBR ISO/IEC 29110-4-1

First edition 2011-01-15

Engenharia de Software — Perfis de Ciclo de Vida Para Micro-organizações (MOs) — Parte 4-1: Especificações de perfil: Grupo Perfil Genérico

Software engineering — Lifecycle profiles for Very Small Entitles (VSEs) — Part 4-1: Profile specifications: Generic profile group

Ingénierie du logiciel — Profils de cycle de vie pour très petits organismes (TPO) — Partie 4-1: Spécification de profil: Groupe de profil générique

ISO/IEC TR 29110-5-1-2

ISO/IEC TR

29110-5-1-2

Primeira edição

2011-05-15

Perfil de Ciclo de Vida para Micro-Organizações

ão fil Básico

29110 Certification Scheme already a brazilian standard...



Certificação do Processo de Desenvolvimento de Software PE-249.01 Data: Abril 2013 Pág. Nº 1/7

A CÓPIA IMPRESSA DESTE DOCUMENTO É CONSIDERADA NÃO-CONTROLADA

SUMÁRIO

Histórico das revisões

- 1 Objetivo
- 2 Referências normativas
- 3 Definições
- 4 Sigla
- 5 Descrição do processo de certificação
- 6 Identificação da certificação

1 Objetivo

Este procedimento específico estabelece o processo para concessão, manutenção e renovação da Certificação do Processo de Desenvolvimento de Software em conformidade com a norma ABNT NBR ISO/ IEC 29110-4-1 para micro organizações (VSE's).

A ABNT NBR ISO/ IEC 29110-4-1 fornece uma especificação para o Perfil Básico que compõe o Grupo de Perfil Genérico. Este Perfil Básico é destinado às micro-organizações (VSE) que desenvolvem software não-críticos e que não necessitam de integração formal com outros sistemas software.

A organização que reivindicar conformidade com a parte 4 da ABNT NBR ISO/ IEC 29110, deve <u>implementar</u> e utilizar todos os elementos obrigatórios do perfil, como identificados na Seção 7, como processos, atividades, objetivos e saída das atividades.

	Fundação Vanzolini	P.0109.00 - Procedimento Específico NBR ISO / IEC 29110		
ı	Emissão: 09/07/12	Página 1 de 13	Data Rev: 09/07/12	7

Elaborado por:	Assinatura:	
Marcelo Pessoa		
Sarah Kohan		
Airton Carlos Gonzalez		
Aprovado por: José Joaquim Amaral Ferreira	Assinatura:	

1) Objetivo

Descrever as particularidades da certificação em gestão da qualidade na norma NBR ISO/IEC 29110, coi base nos procedimentos gerais.

2) Escopo

Exclusivamente a certificação em conformidade com a NBR ISO/IEC 29110, incluindo as particularidad previstas nos procedimentos gerais, desde a solicitação da certificação por parte do cliente, passand elaboração de proposta, definição de tempo de auditoria, qualificação de auditores, realização das aud

Person

②



Actions...

- Auditor's trainning
 - 3 national
 - 2 international
- Gap Analysis
 - 80% Financial Support (29110 & 20000)
- Implementations
 - Pilot with 100 VSE (5 cities)
 - National Project Negotiation ongoing





Actions

- Publications
 - Implementation Guide
 - ISO 29110 x CMMI x MPS.BR
 - ISO 29110 x 9001
- Certification
 - Financial Support
 - High expectation





















COMMUNICATIONS

• ISO Focus + of February 2013

Translated in French, English, Portuguese and

Spanish

- German and others?







http://profs.etsmtl.ca/claporte/English/VSE/index.html

Pequeñas empresas de tecnología

Aprovechando las ventajas del software y las normas de ingeniería de



COMMUNICATIONS

- ISO Focus + of February 2013
 - Translated in French, English and Spanish (in translation)
 - Japanese, German translations ?

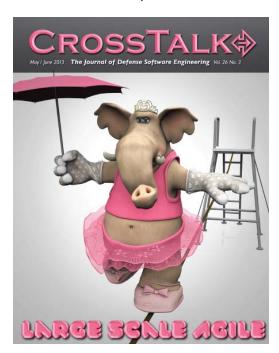






COMMUNICATIONS

- Crosstalk US Department of Defense Journal of Software Engineering (free)
 - May/June Issue
 - About 325,000 readers



http://www.crosstalkonline.org/

LARGE SCALE AGILE

International Systems and Software Engineering Standards for Very **Small Entities**

Claude Y. Laporte, École de technologie supérieure Rory V. O'Connor, Dublin City University Gauthier Fanmuy, ADN

Abstrace. Very Small Entities (VSEs) developing systems or software are very important to the military since the components they develop are often integrated into products made by larger organizations. Pallure to deliver a quality product on time and within budget may threaten both customers and suppliers. One way to mitigate these risks is to put in place proven engineering practices. ISO has approved recently the publication of standards and technical reports, known as ISO/ IEC 29110, to address the needs of VSEs.

More than ever, integrators of military systems depend on their numerous suppliers to deliver sub-systems meeting evolving requirements correctly, predictably, rapidly, and cost effectively. A supply chain of a large system often has a pyramidal structure. If an undetected defect is left in a low level component, once this component is integrated into a higher level component, the defect may still be undetected. For example, as Illustrated in Figure 1, a large manufacturer integrated into one of its products a component, with an undetected software error, which was produced by one of its lowest-level suppliers. This defective component resulted in a loss of millions of dollars by

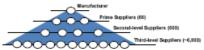


Figure 1: Example of the supply chain of a large manufacturer (adapted from [1])

The ability of organizations to compete, adapt, and survive depends increasingly on quality, productivity, cycle time and cost. Systems and software are getting bigger and more complex every year. As an example, a top of the line cars have up to 100 million lines of code, 80 processors and 5 bus systems [2].

Industry recognizes the value of VSEs, Le. enterprises, organizations, projects or departments with up to 25 people [3], in contributing valuable products and services. There is a need to help these organizations understand the benefit of the concepts, processes and practices described in systems and software engineering standards, and to help them in their implementation. At every level of the supply chain, illustrated in figure 1, we find

VSEs since a system integrator as well as its prime suppliers have also very small projects.

Research shows that small and very small enterprises can find it difficult to relate to ISO standards to their business needs and to justify the application of the standards to their business practices [4]. Most of these enterprises do not have the expertise or can not afford the resources-in number of employees, cost, and time-or see a net benefit in establishing lifecycle processes. There is sometimes a disconnect between the short-term vision of an enterprise, looking at what will keep it in business for another six months or so, and the long-term or mid-term benefits of gradually improving the ways the enterprise can manage its development and maintenance processes. A primary reason cited by many small enterprises for this lack of adoption of systems or software engineering standards, is the perception that they have been developed by and for large companies and not with very small organizations in mind [5]. To date, VSEs have no or wary limited ways to be recognized, by large organizations, as enterprises that produce quality products within budget and calendar in their domain and may therefore be cut off from some economic activities. Accordingly there was a need to help VSEs understand and use the concepts, processes and practices proposed in the ISO/ IEC JTC1/SC7's1 international engineering standards.

The recently published set of ISO/IEC 29110 international standards (IS) and technical reports (TR) are almed at addressing these issues as well as the specific needs of VSEs. The engineering standards and guides developed by an ISO working group, Working Group 24 (WG24)⁵, are targeted at VSEs which do not have experience or expertise in selecting, for a specific project, the appropriate processes from lifecycle standards such as ISO/IEC 12207 [6] or ISO/IEC 15288 [7] tailor them to the needs of a specific project.

in the next section, a high level summary of the approach used to develop the ISO/IEC 29110 standard and discuss some of its key concepts, including project management and software implementation processes. We will then present the initial support work on deployment assistance for VSE in using this standard and finish by discussing the planned future work.

The WG24 Approach to the Development of Standards for VSEs Developing Software

Since an international standard dedicated to the software lifecycle processes was already available, i.e. ISO/IEC 12207, WG24 used the concept of ISO standardized profiles (SF) to develop the new standards for VSEs developing software. From a practical point of view, a profile is a kind of matrix which identifies precisely the elements that are taken from existing standards from those that are not. The overall approach followed by WG24 to develop this new standard for VSE consisted of the following steps:

- 1. Develop a set of profiles for VSEs not involved in critical software development,
- 2. Select the ISO/IEC 12207 process subsets applicable to VSEs having up to 25 people
- Select the description of the products, to be produced by a project, using ISO/IEC 15289 standard [8],
- Develop guidelines, checklists, templates, and examples to support the subsets selected.

GreenTells-Moy June 2013

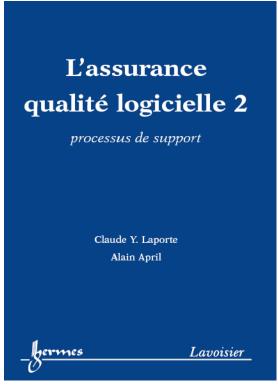


Software Quality Assurance Textbooks

In French (Published in 2011)

In English (2013/2014)





Software Quality
Assurance

CLAUDE Y LAPORTE
École de technologie supérieure

ALAIN APRIL
École de technologie supérieure

FIRST EDITION

JOHN WILEY & SONS, INC
New York / Chichester / Weinheim / Brizbane / Singapore / Toronto

400 pages

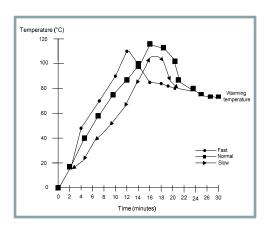
386 pages

ISO 29110 is presented in many chapters of the textbooks



Software Quality Assurance Course Laboratory

- Ten-week Team Project
 - Develop, in teams of 4 students, a software for a rice cooker
 - Professors are the owners of ACME Inc.
 - Project is divided in 6 parts (objectives and deliverables)
 - An initial Statement of Work is provided
 - Software has to be developed using Basic Profile ISO/IEC 29110 Standard for Very small entities

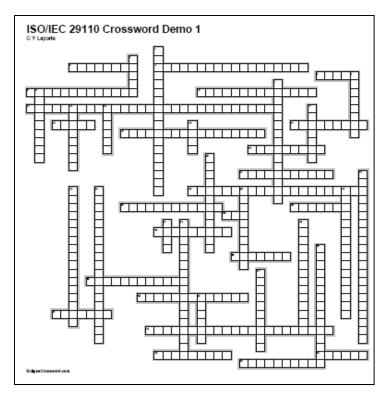


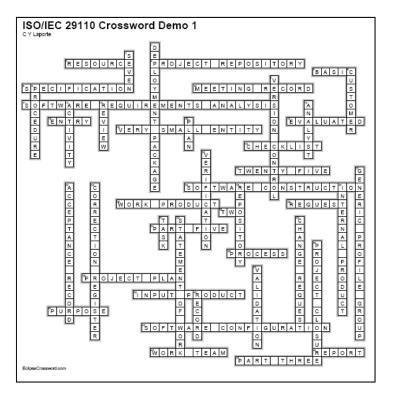


Canada

- Crosswords to be used in class and workshops
 - Developed using open source software tool

http://www.eclipsecrossword.com/tour.html

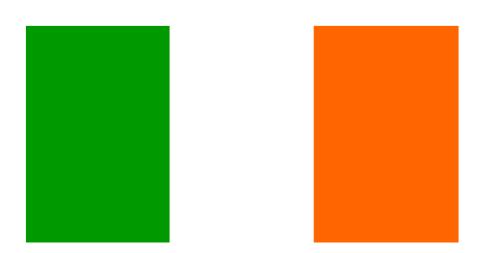




Thinking about developing a 'Serious Game' for ISO 29110

Ireland (last 12 months)

- Rory O'Connor and Marty Sanders
- 2012 pilot programme



How we started...

- In October 2011 an open meeting with Irish VSEs was held, with the assistance of Enterprise Ireland¹
- The purpose of this meeting
 - Invite small companies to learn about the ISO/IEC 29110 standard
 - And decide if they wanted to participate in a training programme to apply it in their companies
 - With 12 months free support
- 53 VSEs participated
- In total 7 companies expressed interest in joining the pilot programme

What we did...

- A preliminary self-assessment, including questions about the company's intentions and ability to work on implementation of the standard was conducted
- It was further agreed that the participating companies would address ISO/IEC 29110 processes separately
 - (version control, project …)
- 4 step process:
 - VSEs were sent a deployment package and other supporting other materials.
 - VSEs implement the process and report on activities, successes and problems to the researchers.
 - The researchers review the reports and return any useful comments to the companies.
 - The researchers make any amendment to the process to ensure greater success with the next process module

12 month status

- After 3 months, 4 of the participating companies reported they had paused in applying the standard but hoped to return to it
- 1 pulled out of the programme and 1 restarted work on the standard and submitted documents in July
- 1 never started after an initial expression of interest

Stage and Task	No. of VSEs
1. Initial assessment	7 companies
2. Version control package sent	7 companies
3. Report on version control returned	3 companies
4. Project management package sent	3 companies
5. Status report returned	5 companies
6. Project management & requirements documents returned for review	1 company
7. Draft final report sent with comments requested	2 companies

Our thoughts now...

- After our experiences with more complex standards (CMMI, SPICE), this seemed like such a simple standard it would nearly come as second nature to install
 - This didn't turn out to be the case.
- Some of the questions asked by the companies showed what seemed fairly straightforward could get much more complicated in a development environment.
- Working with e-mail only was not as effective.
 - Difficult to maintain momentum
- At least some personal mentoring and assessing at the company site are desirable and sometimes necessary for implementation of this type of programme.
- From a VSE perspective the lack of time is probably more of an issue than lack of financial help for small companies
- Essentially very small companies have too much work to do, with too little time and people to do it
- In some cases, a standard is still viewed as an add-on task, not a way to do business.
- However, two companies are progressing well, if delayed, so it can be done.

Some quotes

- "Although we dropped out of the initial project we have taken inspiration from the standard and made many improvements".
- "I am sure other companies in the programme have also gotten benefits... You should not underplay this improvement and the awareness you are building".
- "I am not sure what our status is from your perspective at this time but we have been implementing a number of recommendations as they become appropriate..."

Overview of activities since last meeting Japan Japan

- JIS X-0165 (ISO/IEC 29110-2) will be published at 6/20
 - TR can't be translated as JIS (Japan Industry Standard)
 - -> Problem ?! No VSE guide
- A VSE guide book is developing at JISA
 - will be published by end of 2013.

JISA: Japan Information Technology Services Industry Association < http://www.jisa.or.jp/e/>

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Overview of activities since last meeting

Japan



 AIST developed a comprehensive version DP for Basic Profile (in Japanese)

> https://docs.google.com/viewer?a=v&pi d=sites&srcid=ZGVmYXVsdGRvbWF pbnxzd2V0b29sY2hhaW58Z3g6NTRk ODg5MzUyYTc3ZDdiNg

ISO/IEC 29110 規格 一般的で簡潔な記述 詳細を補う デブロイメント テンプレート ISO/IEC29110の手引き 具体的な実施内容の説明 ツールを紹介 テクニックを紹介 テンプレートを提供 開発プロセス全体を支援 テクニック 規格 ソフトウェア プロジェクトマ ネージメントプ ロセスが、 結合及び 要件分析 テスト ソフトウェア実 レポジトリ 装プロセスを支 夹装開始 プロジェクトの プロジェクト計画 プロジェクト終結 プロジェクト実行

AIST: The National Institute of Advanced Industrial Science and Technology

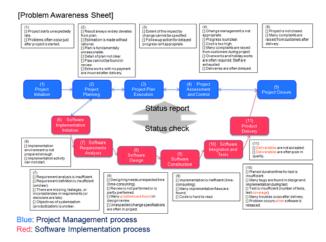
http://www.aist.go.jp/aist e/about aist/index.html

Overview of activities since last meeting

Japan



- DP of SPINA3CH for VSE will be ready soon at VSE Center at Keio-SDM institute.
 - Translation was done (by IPA/SEC)



- Need to adopt DP format
- Need final review at the VSE Center

(activity diagram with Profile information+ problem candidates)+ Basic profile (Part 5-1-2) Problem Cards based on+ (problem candidates) Profile X (Part 5-m-n)+ Analysis/Focus Sheet (blank work sheet)↔ Software Engineering Themes Sheet reflects⊬ Improvement Study Worksheet Software/systems activities/processes and engineering hest practices) experiences, ideas best practices and Improvement Planning Sheet₄ Improvement Cycles+

VSE Center at Keio-SDM institute < http://vse.jp/>

Mexico SPAIN AENOR book chapter

• Hanna Oktaba, Francisco J. Pino Correa y Mario Piattini Velthuis, "El ciclo de vida del desarrollo del software para pequeñas organizaciones (ISO/IEC 29110)", pág. 265-294, Chapter 9 of the book "Modelo para el gobierno de las TIC basado en las normas ISO" Carlos Manuel Fernández Sánchez y Mario Piattini Velthuis (coords), AENORediciones, España, 2012.

Master thesis 1/4

• Yesenia Campos Valdovinos, "Desarrollo de una herramienta de Auto-Evaluación para el cumplimiento de ISO/IEC29110: 5-1-2 Perfil Básico", 21 de enero de 2013.

 Auto-Evaluation ISO/IEC 29110 5-1-2 (in Spanish)

Master thesis 2/4

 Alejandro Brena Illán, "Construcción de una guía basada en el método ágil SCRUM para adoptar el proceso de Administración de Proyecto del estándar ISO/IEC 29110 5-1-2 Perfil Básico", 28 de febrero de 2013.

• SCRUM guide extended to cover ISO/IEC 29110 5-1-2 Project Management process (in Spanish)

Master thesis 3/4

• Ian Moisés Rangel Villagrán, "Procesos en el desarrollo de aplicaciones para dispositivos móviles", 25 de abril de 2013.

 MP-Mobile – Basic profile interpretation and extension to cover mobile software development (in Spanish – soon transalated to English)

Master thesis 4/4

- Alejandro Parmeno Pérez
 Hernandez, "Interpretación de ISO/IEC 29110
 Perfil Básico con principios y prácticas de
 Lean Software Development", almost ready.
- Basic profile interpretation including Lean Software Development principles and practice. (in Spanish)

It could be found

• www.kuali-kaans.mx

• Section 29110

Promoting the model

- We are working with the Economy Ministry of México, to promote the adoption of international standards like ISO/IEC 29110 and ISO/IEC 20000
 - The last "Technological Circuit" was on May 15th in México city.
 - The next "Technological Circuit" will be on June 6th in Puebla city.
- Also, we are working with the Economy Ministry of México to get funds from the Federal Government to help VSE's to implement the model. The program involves training, implementation and certification.



ISO/IEC 29110 Progress in Thailand









Current Status

Implementation and Certification

- More than 200 VSEs join Implementation Project. Software Industry Promotion Agency (SIPA) and FTI (The Federation of Thai Industries) have a co-project to support 50 VSEs to achieve ISO/IEC 29110 Certification.
- A Collaboration among Government sector, Private sector and Nation Accreditation Council (NAC) has been initiated to set Certification Scheme of ISO/IEC 29110 in Thailand.

Qualified Resources

- 12 qualified ISO/IEC 33000 (15504) Auditors.
- More than 15 ISO/IEC 29110 Consultants.
- At least 4 CBs for ISO/IEC 29110 is in preparation state.



Current Status

Education Link

- Free Fundamental ISO/IEC 29110 Training in **3-4** Universities.
- Technology Transfer Program has been set to transfer knowledge from Software Standard Experts to University Lecturers.

Future Work





