

This is a preview of "ISO/IEC TR 29110-5-6...". [Click here to purchase the full version from the ANSI store.](#)

First edition
2015-12-01

Systems and software engineering — Lifecycle profiles for Very Small Entities (VSEs) —

Part 5-6-1:

Systems engineering — Management and engineering guide: Generic profile group: Entry profile

*Ingénierie des systèmes et du logiciel - Ingénierie des systèmes - Profils
de cycle de vie pour très petits organismes (TPO) - Partie 5-6-1: —*

Partie 5-6-1: Guide d'ingénierie et de gestion - Profil d'entrée



Reference number
ISO/IEC TR 29110-5-6-1:2015(E)

© ISO/IEC 2015



COPYRIGHT PROTECTED DOCUMENT

© ISO/IEC 2015, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

This is a preview of "ISO/IEC TR 29110-5-6...". Click here to purchase the full version from the ANSI store.

Contents

	Page
Foreword	iv
Introduction	v
1 Scope	1
1.1 Fields of application	1
1.2 Target audience	1
2 Normative references	2
3 Terms and definitions	2
4 Symbols and abbreviated terms	3
4.1 Naming, diagramming, and definition conventions.....	3
4.2 Abbreviated terms	5
5 Systems Thinking	5
6 Overview	6
7 Project Management (PM) process	7
7.1 PM purpose.....	7
7.2 PM objectives.....	7
7.3 PM input products.....	8
7.4 PM output products.....	8
7.5 PM internal products.....	9
7.6 PM roles involved.....	9
7.7 PM diagram.....	9
7.7.1 PM activities.....	10
7.7.2 PM incorporation to <i>Project Repository</i>	16
8 System Definition and Realization (SR) process	16
8.1 SR purpose.....	16
8.2 SR objectives.....	16
8.3 SR input products.....	17
8.4 SR output products.....	17
8.5 SR internal products.....	17
8.6 SR roles involved.....	17
8.7 SR diagram.....	18
8.7.1 SR activities.....	18
8.7.2 SR incorporation to the <i>Project Repository</i>	28
9 Roles	29
10 Product description	30
11 System tools requirements	41
11.1 System tools requirements overview.....	41
11.2 Project management process.....	41
11.3 System definition and realization process.....	42
Annex A (informative) Systems engineering deployment packages	43
Annex B (informative) Mapping between the objectives of ISO/IEC/TR 29110-5-6-1 and ISO/IEC/IEEE 15288:2015	45
Bibliography	50

Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/IEC JTC 1, *Information technology*, Subcommittee SC 7, *Software and systems engineering*.

ISO/IEC 29110 consists of the following parts, under the general title *Systems and software engineering — Lifecycle profiles for Very Small Entities (VSEs)*:

The full list of parts of ISO/IEC 29110 is available [here](#).

This is a preview of "ISO/IEC TR 29110-5-6...". [Click here to purchase the full version from the ANSI store.](#)

Introduction

Very Small Entities (VSEs) around the world are creating valuable products and services. For the purpose of ISO/IEC 29110, a Very Small Entity (VSE) is an enterprise, an organization, a department or a project having up to 25 people. Since many VSEs develop and/or maintain system and software components used in systems, either as independent products or incorporated in larger systems, a recognition of VSEs as suppliers of high quality products is required.

According to the Organization for Economic Co-operation and Development (OECD) SME and Entrepreneurship Outlook report (2005) "Small and Medium Enterprises (SMEs) constitute the dominant form of business organization in all countries world-wide, accounting for over 95 % and up to 99 % of the business population depending on country". The challenge facing governments and economies is to provide a business environment that supports the competitiveness of this large heterogeneous business population and that promotes a vibrant entrepreneurial culture.

From studies and surveys conducted, it is clear that the majority of International Standards do not address the needs of VSEs. Implementation of and conformance with these standards is difficult, if not impossible. Consequently VSEs have no, or very limited, ways to be recognized as entities that produce quality systems/system elements including software in their domain. Therefore, VSEs are excluded from some economic activities.

It has been found that VSEs find it difficult to relate International Standards to their business needs and to justify the effort required to apply standards to their business practices. Most VSEs can neither afford the resources, in terms of number of employees, expertise, budget and time, nor do they see a net benefit in establishing over-complex systems or software lifecycle processes. To address some of these difficulties, a set of guides has been developed based on a set of VSE characteristics. The guides are based on subsets of appropriate standards processes, activities, tasks, and outcomes, referred to as Profiles. The purpose of a profile is to define a subset of International Standards relevant to the VSEs' context; for example, processes, activities, tasks, and outcomes of ISO/IEC/IEEE 12207 for software; and processes, activities, tasks, and outcomes of ISO/IEC/IEEE 15288 for systems; and information products (documentation) of ISO/IEC/IEEE 15289 for software and systems.

VSEs can achieve recognition through implementing a profile and by being audited against ISO/IEC 29110 specifications.

The ISO/IEC 29110 series of International Standards and Technical Reports can be applied at any phase of system or software development within a lifecycle. This series of International Standards and Technical Reports is intended to be used by VSEs that do not have experience or expertise in adapting/tailoring ISO/IEC/IEEE 12207 or ISO/IEC/IEEE 15288 standards to the needs of a specific project. VSEs that have expertise in adapting/tailoring ISO/IEC/IEEE 12207 or ISO/IEC/IEEE 15288 are encouraged to use those standards instead of ISO/IEC 29110.

ISO/IEC 29110 is intended to be used with any lifecycle such as: waterfall, iterative, incremental, evolutionary or agile.

The ISO/IEC 29110 series, targeted by audience, has been developed to improve system or software and/or service quality, and process performance (see [Table 1](#)).

This is a preview of "ISO/IEC TR 29110-5-6...". [Click here to purchase the full version from the ANSI store.](#)

Table 1 — ISO/IEC 29110 target audience

ISO/IEC 29110	Title	Target audience
Part 1	Overview	VSEs and their customers, assessors, standards producers, tool vendors and methodology vendors
Part 2	Framework and taxonomy	Profile producers, tool vendors and methodology vendors Not intended for VSEs
Part 3	Assessment guide	VSEs and their customers, assessors, accreditation bodies
Part 4	Profile specifications	VSEs, customers, standards producers, tool vendors, and methodology vendors
Part 5	Management and engineering guide	VSEs and their customers

If a new profile is needed, ISO/IEC 29110-4 and ISO/IEC TR 29110-5 can be developed with minimal impact to existing documents.

ISO/IEC TR 29110-1 defines the terms common to the ISO/IEC 29110 series. It introduces processes, lifecycle and standardization concepts, the taxonomy (catalogue) of ISO/IEC 29110 profiles, and the ISO/IEC 29110 series. It also introduces the characteristics and needs of a VSE, and clarifies the rationale for specific profiles, documents, standards, and guides.

ISO/IEC 29110-2 introduces the concepts for systems and software engineering profiles for VSEs. It establishes the logic behind the definition and application of profiles. For standardized profiles, it specifies the elements common to all profiles (structure, requirements, conformance, assessment). For domain-specific profiles (profiles that are not standardized and developed outside of the ISO process), it provides general guidance adapted from the definition of standardized profiles.

ISO/IEC TR 29110-3 defines certification schemes, assessment guidelines and compliance requirements for process capability assessment (ISO/IEC 33xxx), conformity assessments (ISO/IEC 17xxx), and self-assessments for process improvements. ISO/IEC 29110-3 also contains information that can be useful to developers of certification and assessment methods and developers of certification and assessment tools. ISO/IEC 29110-3 is addressed to people who have direct involvement with the assessment process, e.g. the auditor, certification and accreditation bodies and the sponsor of the audit, who need guidance on ensuring that the requirements for performing an audit have been met.

ISO/IEC 29110-4-m provides the specification for all profiles in one profile group that are based on subsets of appropriate standards elements. Profile groups cover the following domains: systems engineering, software engineering and service delivery.

ISO/IEC TR 29110-5-m-n provides a management and engineering guide for each profile in one profile group.

The future ISO/IEC TR 29110-6-x provides management and engineering guides not tied to a specific profile.

This part of ISO/IEC 29110 provides an implementation management and engineering guide for the Entry Profile of the Generic Profile Group specified in ISO/IEC 29110-4-6. The Entry Profile is targeted at start-up VSEs (i.e. VSEs who started their operation less than three years) and/or at VSEs working on small project (e.g. project size of less than six person-months).

[Figure 1](#) describes the International Standards (IS) and Technical Reports (TR) of ISO/IEC 29110 and positions the parts within the framework of reference. Overview, assessment guide, management and engineering guide are available from ISO as freely available Technical Reports (TR). The Framework document, profile specifications and certification schemes are published as International Standards (IS).

This is a preview of "ISO/IEC TR 29110-5-6...". Click here to purchase the full version from the ANSI store.

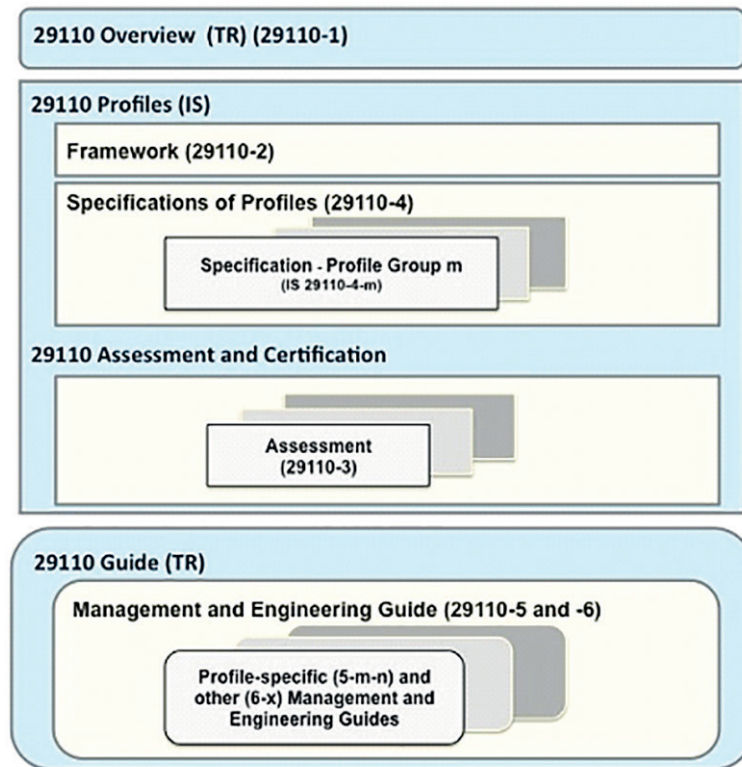


Figure 1 — ISO/IEC 29110 series