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Information technology — Process assessment —

Part 1: Concepts and vocabulary

Technologies de l'information — Évaluation des procédés — Partie 1: Concepts et vocabulaire

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ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

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.

ISO/IEC 15504-1 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 7, *Software and system engineering*.

This edition cancels and replaces ISO/IEC TR 15504-1:1998 and ISO/IEC TR 15504-9:1998, which have been technically revised.

ISO/IEC 15504 consists of the following parts, under the general title *Information technology — Process assessment*:

— *Part 1: Concepts and vocabulary*

— *Part 2: Performing an assessment*

— *Part 3: Guidance on performing an assessment*

— *Part 4: Guidance on use for process improvement and process capability determination*

The following part is in preparation:

— *Part 5: An exemplar Process Assessment Model*

The complete series will replace ISO/IEC TR 15504-1 to ISO/IEC TR 15504-9.

Introduction

This part of ISO/IEC 15504 provides a general introduction to the concepts of process assessment and a glossary for assessment related terms.

ISO/IEC 15504-2 sets out the minimum requirements for performing an assessment that ensure consistency and repeatability of the ratings. The requirements help to ensure that the assessment output is self-consistent and provides evidence to substantiate the ratings and to verify compliance with the requirements.

ISO/IEC 15504-3 provides guidance for interpreting the requirements for performing an assessment.

ISO/IEC 15504-4 identifies process assessment as an activity that can be performed either as part of a process improvement initiative or as part of a capability determination approach. The purpose of process improvement is to continually improve the organization's effectiveness and efficiency. The purpose of process capability determination is to identify the strengths, weaknesses and risks of selected processes with respect to a particular specified requirement through the processes used and their alignment with the business need.

ISO/IEC 15504-5 contains an exemplar Process Assessment Model that is based upon the Process Reference Model defined in ISO/IEC 12207 Amd 1 Annex F and Amd 2. An assessment is carried out utilizing conformant Process Assessment Model(s) related to one or more conformant or compliant Process Reference Models.

Information technology — Process assessment —

Part 1:
Concepts and vocabulary

1 Scope

This part of ISO/IEC 15504 provides overall information on the concepts of process assessment and its use in the two contexts of process improvement and process capability determination. It describes how the parts of the suite fit together, and provides guidance for their selection and use. It explains the requirements contained within ISO/IEC 15504, and their applicability to performing assessments.

Readers of this guide should familiarize themselves with the terminology and structure of the document suite, and then reference the appropriate parts of the suite for the context in which they propose to conduct an assessment. A more detailed description of the use of ISO/IEC 15504 is given in clause 4.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 9000:2000, *Quality management systems — Fundamentals and vocabulary*

ISO/IEC 2382-1:1993, *Information technology — Vocabulary — Part 1: Fundamental terms*

ISO/IEC 2382-20:1990, *Information technology — Vocabulary — Part 20: System development*

ISO/IEC 12207:1995, Amd 1:2002, Amd 2:2004. *Information technology — Software life cycle processes*

ISO/IEC 15288:2002, *Systems engineering — System life cycle processes*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 9000, ISO/IEC 2382-1, ISO/IEC 2382-20, ISO/IEC 12207 and ISO/IEC 15288 and the following apply.

3.1
acquirer
the stakeholder that acquires or procures a product or service from a supplier

[ISO/IEC 15288]

NOTE Other terms commonly used for an acquirer are buyer, customer, purchaser. The acquirer may at the same time be the owner, user or operating organization.

3.2
assessed capability
the output of one or more relevant process assessments conducted in accordance with the provisions of ISO/IEC 15504

3.3
assessment constraints
restrictions placed on the use of the assessment outputs and on the assessment team's freedom of choice regarding the conduct of the assessment

3.4
assessment indicator
sources of objective evidence used to support the assessors' judgement in rating process attributes

EXAMPLE Work products, practice, or resource

3.5
assessment input
information required before a process assessment can commence

3.6
assessment instrument
a tool or set of tools that is used throughout an assessment to assist the assessor in evaluating the performance or capability of processes, in handling assessment data and in recording the assessment results

3.7
assessment output
all of the tangible results from an assessment (see *assessment record*)

3.8
assessment participant
an individual who has responsibilities within the scope of the assessment

NOTE Examples include but are not limited to the assessment sponsor, assessors, and organizational unit members.

3.9
assessment process
a determination of the extent to which the organization's standard processes contribute to the achievement of its business goals and to help the organization focus on the need for continuous process improvement

[ISO/IEC 12207 Amd 1]

3.10
assessment purpose
a statement, provided as part of the assessment input, which defines the reasons for performing the assessment

3.11
assessment record
an orderly, documented collection of information which is pertinent to the assessment and adds to the understanding and verification of the process profiles generated by the assessment

3.12
assessment scope
a definition of the boundaries of the assessment, provided as part of the assessment input, encompassing the organizational limits of the assessment, the processes to be included, and the context within which the processes operate (see *process context*)

3.13
assessment sponsor
the individual or entity, internal or external to the organizational unit being assessed, who requires the assessment to be performed, and provides financial or other resources to carry it out

3.14
assessment team
one or more individuals who jointly perform a process assessment

3.15
assessor
an individual who participates in the rating of process attributes

NOTE An assessor is either a competent assessor or a provisional assessor.

3.16
attribute indicator
an assessment indicator that supports the judgement of the extent of achievement of a specific process attribute

3.17
base practice
an activity that, when consistently performed, contributes to achieving a specific process purpose

3.18
capability dimension
the set of elements in a Process Assessment Model explicitly related to the Measurement Framework for Process Capability

NOTE The attributes are organized into capability levels, comprising an ordinal scale of process capability.

3.19
capability indicator
an assessment indicator that supports the judgement of the process capability of a specific process

NOTE An attribute indicator is a specific instance of a capability indicator.

3.20
competent assessor
an assessor who has demonstrated the competencies to conduct an assessment and to monitor and verify the conformance of a process assessment

3.21
defined process
a process that is managed (planned, monitored and adjusted), and tailored from the organization's set of standard processes according to the organization's tailoring guidelines

NOTE A defined process has a maintained process description; and contributes work products, measures, and other process improvement information to the organization's process assets. A project's defined process provides a basis for planning, performing, and improving the project's tasks and activities of the project.

3.22
generic practice
an activity that, when consistently performed, contributes to the achievement of a specific process attribute

3.23
indicator
(see *assessment indicator*)

3.24
objective evidence
data supporting the existence or verity of something

NOTE Objective evidence may be obtained through observation, measurement, test, or other means.

[ISO 9000:2000]

3.25
organizational unit
that part of an organization that is assessed

NOTE 1 An organizational unit deploys one or more processes that have a coherent process context and operates within a coherent set of business goals.

NOTE 2 An organizational unit is typically part of a larger organization, although in a small organization, the organizational unit may be the whole organization. An organizational unit may be, for example:

- a specific project or set of (related) projects;
- a unit within an organization focused on a specific lifecycle phase (or phases) such as acquisition, development, maintenance or support;
- a part of an organization responsible for all aspects of a particular product or product set.

3.26
performance indicator
an assessment indicator that supports the judgement of the process performance of a specific process

NOTE A performance indicator is an attribute indicator for Process Attribute 1.1 for a specific process. (See ISO/IEC 15504-2.)

3.27
practice
an activity that contributes to the purpose or outcomes of a process or enhances the capability of a process

3.28
process
set of interrelated or interacting activities which transforms inputs into outputs

[ISO 9000]

3.29
process assessment
a disciplined evaluation of an organizational unit's processes against a Process Assessment Model

3.30
Process Assessment Model
a model suitable for the purpose of assessing process capability, based on one or more Process Reference Models

3.31
process attribute
a measurable characteristic of process capability applicable to any process

3.32
process attribute rating
a judgement of the degree of achievement of the process attribute for the assessed process

3.33
process capability
a characterization of the ability of a process to meet current or projected business goals

3.34
process capability determination
a systematic assessment and analysis of selected processes within an organization against a target capability, carried out with the aim of identifying the strengths, weaknesses and risks associated with deploying the processes to meet a particular specified requirement

3.35
process capability determination sponsor
the individual or entity, internal or external to the organizational unit being assessed, who requires the process capability determination to be performed, and provides financial or other resources to carry it out

3.36
process capability level
a point on the six-point ordinal scale (of process capability) that represents the capability of the process; each level builds on the capability of the level below

3.37
process capability level rating
a representation of the achieved process capability level derived from the process attribute ratings for an assessed process

3.38
process context
the set of factors, documented in the assessment input, that influence the judgment, comprehension and comparability of process attribute ratings

3.39
process dimension
the set of elements in a Process Assessment Model explicitly related to the processes defined in the relevant Process Reference Model(s)

NOTE The processes may be grouped based on different criteria. For example in 15504-5 they are grouped into categories of related activities

3.40
process improvement
actions taken to change an organization's processes so that they more effectively and/or efficiently meet the organization's business goals

3.41
process improvement programme
all the strategies, policies, goals, responsibilities and activities concerned with the achievement of specified improvement goals

NOTE A process improvement programme can span more than one complete cycle of process improvement.

3.42
process improvement project
any subset of the process improvement programme that forms a coherent set of actions to achieve a specific improvement

3.43
process improvement sponsor
the individual or entity, internal or external to the organizational unit being assessed, who requires the process improvement to be performed, and provides financial or other resources to carry it out

3.44
process outcome
an observable result of a process

NOTE An outcome is an artefact, a significant change of state or the meeting of specified constraints.