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Software engineering — Process assessment —

Part 2: Performing an assessment

*Génie logiciel — Procédés d'évaluation —
Partie 2: Exécution d'une évaluation*

Withhold

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Contents

Page

Foreword.....	iv
Introduction	iv
1 Scope.....	1
2 Normative references	1
3 Terms and definitions.....	2
4 Performing an assessment	2
4.1 General.....	2
4.2 The assessment process	2
4.3 Roles and responsibilities.....	4
4.4 Defining the initial assessment input	4
4.5 Recording the assessment output.....	6
5 Measurement framework for process capability	6
5.1 Level 0: Incomplete process.....	6
5.2 Level 1: Performed process.....	6
5.3 Level 2: Managed process	7
5.4 Level 3: Established process.....	8
5.5 Level 4: Predictable process	9
5.6 Level 5: Optimizing process	9
5.7 Rating process attributes.....	10
5.8 Process capability level model.....	11
6 Models for process assessment	11
6.1 Introduction	11
6.2 Process Reference Models	12
6.3 Process Assessment Models	13
7 Mechanisms for verification of conformity	15
7.1 Introduction	15
7.2 Verifying conformity of Process Reference Models.....	16
7.3 Verifying conformity of Process Assessment Models.....	16
7.4 Verifying conformity of process assessments	16

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 15504-2 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 7, *Software and system engineering*.

This first edition of ISO/IEC 15504-2 cancels and replaces ISO/IEC TR 15504-2:1998 and ISO/IEC TR 15504-3:1998, which have been technically revised.

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

- *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 parts are in preparation:

- *Part 1: Concepts and vocabulary*
- *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 defines the basis for process assessment. Other parts of ISO/IEC 15504 contain guidance that will provide a more detailed understanding of the subject. It is primarily addressed to the competent assessor and other stakeholders, such as the sponsor of the assessment, who need to be assured that the requirements of this International Standard have been met. It will also be of value to developers of assessment methods and of tools to support an assessment.

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 15504-1 provides a general introduction to the concepts of process assessment and a glossary for assessment related terms.

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

This part of ISO/IEC 15504 identifies the measurement framework for process capability and the requirements for:

- a) performing an assessment;
- b) Process Reference Models;
- c) Process Assessment Models;
- d) verifying conformity of process assessment.

Process assessment, as defined in this International Standard, is based on a two dimensional model containing a process dimension and a capability dimension. The process dimension is provided by an external Process Reference Model, which defines a set of processes characterized by statements of process purpose and process outcomes. The capability dimension consists of a measurement framework comprising six process capability levels and their associated process attributes.

The assessment output consists of a set of process attribute ratings for each process assessed, termed the process profile, and may also include the capability level achieved by that process.

Process assessment is applicable in the following circumstances:

- a) by or on behalf of an organization with the objective of understanding the state of its own processes for process improvement;
- b) by or on behalf of an organization with the objective of determining the suitability of its own processes for a particular requirement or class of requirements;
- c) by or on behalf of one organization with the objective of determining the suitability of another organization's processes for a particular contract or class of contracts.

As described in ISO/IEC 15504-4, process assessment is an activity that can be performed either as part of a process improvement initiative or as part of a capability determination approach. The formal entry to the assessment process occurs with the compilation of the assessment input which defines the purpose of the assessment (why it is being carried out), the scope of the assessment, what constraints apply to the assessment and any additional information that needs to be gathered. The assessment input also defines the responsibility of the various parties in the performance of an assessment. An assessor who has the necessary

competence and skills oversees the assessment. Assessors may be from within the organization, external to the organization or a combination of both.

An assessment is carried out against a defined assessment input utilizing conformant Process Assessment Model(s) related to one or more conformant or compliant Process Reference Models. ISO/IEC TR 15504-5 contains an exemplar Process Assessment Model that is based upon the Process Reference Model defined in ISO/IEC 12207:1995/Amd.1, Annex F.

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Software engineering — Process assessment —

Part 2: Performing an assessment

1 Scope

This part of ISO/IEC 15504 addresses the assessment of process and the application of process assessment for improvement and capability determination. It defines the minimum set of requirements for performing an assessment that will ensure assessment results are objective, impartial, consistent, repeatable and representative of the assessed processes. Results of conformant process assessments may be compared when the scopes of the assessments are considered to be similar. For guidance on this matter, refer to ISO/IEC 15504-4.

The requirements for process assessment defined in this part of ISO/IEC 15504 form a structure which:

- a) facilitates self-assessment;
- b) provides a basis for use in process improvement and capability determination;
- c) takes into account the context in which the assessed process is implemented;
- d) produces a process rating;
- e) addresses the ability of the process to achieve its purpose;
- f) is applicable across all application domains and sizes of organization;
- g) may provide an objective benchmark between organizations.

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

ISO/IEC TR 15504-9, *Information technology — Software process assessment — Part 9: Vocabulary*¹⁾

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

1) A revision of this document is in preparation under the following reference: ISO/IEC 15504-1.