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Information technology — Process assessment —

Part 6:

An exemplar system life cycle process assessment model

Technologies de l'information — Évaluation des procédés —

*Partie 6: Un exemple de modèle d'évaluation des procédés du cycle de
vie d'un système*

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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 15504-6 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 7, *Software and systems engineering*.

This first edition of ISO/IEC 15504-6 cancels and replaces ISO/IEC TR 15504-6:2008.

- Clause 2 is modified by updating the reference to ISO/IEC 15288;
- Clauses 4 and 5 are replaced with new text provided below;
- Clause 6.6 is replaced with new text provided below;
- Annex B.2 is replaced with new text provided below;
- The Bibliography is updated to reflect current versions of works referenced.

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
- Part 5: An exemplar software life cycle process assessment model
- Part 6: An exemplar system life cycle process assessment model
- Part 7: Assessment of organizational maturity
- Part 8: An exemplar process assessment model for IT service management
- Part 9: Target process profiles
- Part 10: Safety extension

Introduction

This part of ISO/IEC 15504 provides an example of a System Life Cycle Process Assessment Model for use in performing a conformant assessment in accordance with the requirements of ISO/IEC 15504-2.

An integral part of conducting an assessment is to use a process assessment model that is constructed for that purpose, is related to a process reference model and is conformant with ISO/IEC 15504-2, which sets out the minimum requirements for performing an assessment in order to ensure consistency and repeatability of the ratings.

A process reference model cannot be used alone as the basis for conducting consistent and reliable assessments of process capability because it requires greater detail to indicate process performance and capability. Therefore:

- the descriptions of process purpose and process outcomes provided by a process reference model need to be supported with a comprehensive set of indicators of process performance; and
- the capability levels and process attributes defined in ISO/IEC 15504-2 and its associated rating scale need to be supported with a set of indicators of process capability.

This additional detail describes a process reference model in terms of a process assessment model that can enable the assessment of consistent and repeatable ratings of process capability.

This Process Assessment Model contains a set of indicators to be considered when interpreting the intent of its Process Reference Model. These indicators may also be used when implementing a process improvement program or to help evaluate and select an assessment model, method, methodology or tools.

The Process Reference Model defined in ISO/IEC 15288:2008 has been used as the basis for the Process Assessment Model in this part of ISO/IEC 15504.

As an exemplar, this Process Assessment Model embodies the core characteristics that could be expected of any Process Assessment Model consistent with ISO/IEC 15504-2. Nevertheless, use of this Process Assessment Model is not required to meet the requirements of ISO/IEC 15504; any other process assessment models meeting the requirements of ISO/IEC 15504-2 may be used in a conformant assessment.

This part of ISO/IEC 15504 has a similar structure to Part 5. It may be used in conjunction with Part 5 for joint assessment of system life cycle processes and software life cycle processes.

This part of ISO/IEC 15504 uses the classification structure of the information work products used in ISO 15289 *Systems and software engineering — Content of systems and software life cycle process information products (Documentation)* as a basis for the Generic Work Products.

Within this part of ISO/IEC 15504:

- Clause 4 provides a detailed description of the structure and key components of a process assessment model, which includes two dimensions: a process dimension and a capability dimension. Assessment indicators are introduced in this clause;
- Clause 5 addresses the process dimension. It uses process definitions from ISO/IEC 15288 to designate the Process Reference Model. The processes of the Process Reference Model are described in the Process Assessment Model in terms of purpose and outcomes and are grouped in four process categories. The Process Assessment Model expands the Process Reference Model process definitions by including a set of process performance indicators called base practices for each process. The Process Assessment Model also defines a second set of indicators of process performance by associating work

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products with each process. Clause 5 is also linked directly to Annex B, which defines the work product characteristics;

- Clause 6 addresses the capability dimension. It duplicates the definitions of the capability levels and process attributes from ISO/IEC 15504-2, and expands each of the nine attributes through the inclusion of a set of generic practices. These generic practices belong to a set of indicators of process capability, in association with generic resource indicators, and generic work product indicators. Annex B is also linked directly to Clause 6 as it defines the work product characteristics;
- Annex A provides a statement of conformance of the Process Assessment Model to the requirements defined in ISO/IEC 15504-2;
- Annex B provides selected characteristics for typical work products to assist the assessor in evaluating the capability level of processes;
- Annex C contains style guides for defining base practices, work products and generic practices for adjusting the Process Assessment Model, and guidance explaining how to expand or adapt the model; and
- The bibliography contains a list of informative references.