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Contents

Page

Foreword

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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).

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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*, SC 7, *Software and systems engineering*.

Introduction

The ISO/IEC 330xx set of standards covering the domain of process assessment are based on a view of assessment that establishes architecture of the following three components:

— process models that define processes, the entities that are the subject of assessment;

— measurement frameworks that provide scales for evaluating specified attributes;

— a specification of the process to be followed in conducting assessments.

This International Standard provides an example of a process assessment model for software testing for use in performing a conformant assessment in accordance with the requirements of ISO/IEC 33002.

An integral part of conducting an assessment is to use a process assessment model (PAM) related to a process reference model (PRM) and conformant with the requirements defined in ISO/IEC 33004.

A process reference model cannot be used alone as the basis for conducting a consistent and reliable assessment of process capability since the level of detail is not sufficient. Therefore,

— the description of the process purpose and process outcome(s) provided by the process reference model needs to be supported with a comprehensive set of indicators of process performance, and

— the capability levels and process attributes defined in ISO/IEC 33020 and its associated rating scale need to be supported with a set of indicators of process capability.

Used in this way and in conjunction with a documented process, consistent and repeatable ratings of process capability is possible.

This International Standard, a process assessment model for software testing, contains a set of indicators to be considered when interpreting the intent of the process reference model. These indicators may also be used when implementing a process improvement program or to help evaluate and select an assessment model, methodology, and/or tools.

The process reference model defined in ISO/IEC/IEEE 29119-2 has been used as the basis for the ISO/IEC 33063 exemplar process assessment model for software testing.

The following are provided within this International Standard:

— Clause 4 provides a detailed description of the structure and key components of the process assessment model, which introduces the following two dimensions: a) process dimension; b) capability dimension. Assessment indicators are also introduced in this Clause;

— Clause 5 addresses the process dimension. It uses process definitions from ISO/IEC/IEEE 29119-2 to identify a process reference model. The processes of the process reference model are described in the process assessment model in terms of purpose and outcomes. 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 products with each process;

— Clause 6 addresses the capability dimension. It duplicates the definitions of the capability levels and process attributes from ISO/IEC 33020 and expands each of the attributes through the inclusion of a set of generic practices. These generic practices belong to a set of indicators of process;

— Annex A provides a statement of conformance of the process assessment model for software testing to the requirements defined in ISO/IEC 33004;

— Annex B provides a guideline on how the planning and scoping of an assessment is done with this process assessment model for software testing;

NOTE As the processes described in this model are generic when practically applied to an assessment, they have to be applied to the different test phases or test levels or test types encountered in the project which is to be assessed. The multiple applications of the processes have to be documented in the assessment scope. It also provides guideline on the use of additional processes from other process assessment models.

— Annex C provides selected characteristics for typical work products to assist the assessor in evaluating the capability level of processes;

— Annex D introduces additional process areas for the process assessment model;

— Annex E provides the additional process reference model processes which will be used by the PAM in Annex D;

— Bibliography contains a list of informative references.