TECHNICAL REPORT

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Software and systems engineering — Software testing —

Part 6: Guidelines for the use of ISO/IEC/IEEE 29119 (all parts) in agile projects

Ingénierie du logiciel et des systèmes — Essais du logiciel —

Partie 6: Lignes directrices pour l'utilisation de l'ISO/IEC/IEEE 29119 (toutes les parties) dans les projets agiles

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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.

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 or www.iec.ch/members_experts/refdocs).

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) or the IEC list of patent declarations received (see patents.iec.ch).

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

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html. In the IEC, see www.iec.ch/understanding-standards.

This document was prepared by Joint Technical Committee ISO/IEC JTC1, *Information technology*, Subcommittee SC 7, *Software and systems engineering*.

A list of all parts in the ISO/IEC/IEEE 29119 series can be found on the ISO and IEC websites.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html and www.iec.ch/national-committees.

Introduction

The purpose of ISO/IEC/IEEE 29119 (all parts) is to define an internationally agreed set of standards for software testing that can be used by any organization when performing any form of software testing.

This document facilitates understanding of how ISO/IEC/IEEE 29119 (all parts) applies to agile life cycles.

ISO/IEC/IEEE 29119-1 introduces software testing concepts and vocabulary. This document uses the concepts and vocabulary of ISO/IEC/IEEE 29119-1.

ISO/IEC/IEEE 29119-2 comprises test process descriptions that define the software testing processes at the organizational level, test management level and dynamic test levels. It supports dynamic testing, functional and non-functional testing, manual and automated testing and scripted and unscripted testing, and can be utilized within any lifecycle model, including agile lifecycles and methodologies.

ISO/IEC/IEEE 29119-3 defines software test documentation. The requirements specified for templates and examples of test documentation defined in ISO/IEC/IEEE 29119-3 can be met in standard or tailored agile lifecycles and methodologies.

ISO/IEC/IEEE 29119-4 defines test design techniques, which can be utilized in any lifecycle, including agile.

ISO/IEC/IEEE 29119-5 addresses the use of keywords to support automated testing.

This document provides a mapping of agile concepts to ISO/IEC/IEEE 29119-2. It also explains how ISO/IEC/IEEE 29119-2 can be adopted under specific agile methodologies and demonstrates how the test documentation templates defined in ISO/IEC/IEEE 29119-3 can be implemented in agile lifecycles.

Clause 4 maps agile practices and artefacts to corresponding clauses of ISO/IEC/IEEE 29119-2. Annex A provides a mapping from The Scrum Guide[6] to ISO/IEC/IEEE 29119-2 clauses. Annex B provides a mapping from all clauses of ISO/IEC/IEEE 29119-2 to the agile practices and artefacts covered under Clause 4. Annex C provides an example mapping of typical test artefacts used in agile to ISO/IEC/IEEE 29119-3. Annex D provides examples of agile test artefacts and explains how they comply with ISO/IEC/IEEE 29119-3.

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Part 6: Guidelines for the use of ISO/IEC/IEEE 29119 (all parts) in agile projects

1 Scope

This document provides guidance for the application of ISO/IEC/IEEE 29119 (all parts) in agile life cycles. This document is intended for (and not limited to) testers, test managers, business analysts, product owners, Scrum masters and developers involved in agile projects. The mappings provided in this document are designed to benefit any team or organization that is either moving away from traditional/waterfall life cycles and into agile or vice versa as well as new organizations that are commencing agile as their chosen life cycle. It is designed to be understandable regardless of the reader's familiarity with ISO/IEC/IEEE 29119 (all parts).

2 Normative references

There are no normative references in this document.

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

NOTE For terms and definitions in the field of systems and software engineering, see ISO/IEC/IEEE 24765, which is published periodically as a "snapshot" of the SEVOCAB (Systems and software Engineering Vocabulary) database and is publicly accessible at www.computer.org/sevocab.

4 Concepts

4.1 Agile practices and artefacts

This document explains how ISO/IEC/IEEE 29119 (all parts) can be adopted for testing in products, projects, teams or organizations that have adopted agile methodologies (referred to in this document as "agile testing"). The aim is to assist users of the processes and documentation templates defined in ISO/IEC/IEEE 29119-2 and ISO/IEC/IEEE 29119-3 in agile life cycles.

Agile is an approach to software and systems development whereby requirements and systems evolve over time via the collaboration and communication of self-organizing cross-functional teams, with regular feedback from end-users, supporting a rapid and flexible response to requirement change. Example agile methodologies include Scrum, SAFe and eXtreme Programming (XP), within which a wide variety of agile practices and artefacts exist. The agile practices and artefacts listed in Table 1 are covered in this document. These agile practices and artefacts include many that are utilized during testing. Some of these practices and artefacts might not be part of a specific agile methodology such