International Standard

ISO/IEC/IEEE 29119-5

Software and systems engineering — Software testing —

Part 5: Keyword-driven testing

Ingénierie du logiciel et des systèmes — Essais du logiciel —

Partie 5: Essais axés sur des mots-clés

Second edition
2024-12

Reference number
ISO/IEC/IEEE 29119-5:2024(en)

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Published in Switzerland

Contents

Page

Foreword ..... **v**

Introduction ..... **vi**

1 Scope **1**

2 Normative references **1**

3 Terms and definitions **1**

4 Conformance **5**
4.1 Intended usage 5
4.2 Full conformance 5
4.3 Tailored conformance 5

5 Introduction to keyword-driven testing **5**
5.1 Overview 5
5.2 Layers in keyword-driven testing 8
5.2.1 Overview 8
5.2.2 Domain layer 9
5.2.3 Test interface layer 10
5.2.4 Multiple layers 10
5.3 Types of keywords 11
5.3.1 Simple keywords 11
5.3.2 Composite keywords 12
5.3.3 Navigation/interaction (input) and verification (output) 15
5.3.4 Keywords that determine test results 15
5.4 Keywords and data 16

6 Application of keyword-driven testing **17**
6.1 Overview 17
6.2 Identifying and documenting keywords 17
6.3 Composing test cases 18
6.4 Keywords and data-driven testing 19
6.5 Modularity and refactoring 19
6.6 Keyword-driven testing in the test design and implementation process 20
6.6.1 Overview 20
6.6.2 Create test model (TD1) 21
6.6.3 Identify test coverage items (TD2) 21
6.6.4 Derive test cases (TD3) 21
6.6.5 Create test procedures (TD4) 22
6.7 Converting non-keyword-driven test cases into keyword-driven test cases 22

7 Keyword-driven testing frameworks **23**
7.1 Overview 23
7.2 Components of a keyword-driven testing framework 23
7.2.1 Overview 23
7.2.2 Keyword-driven editor 25
7.2.3 Decomposer 25
7.2.4 Data sequencer 26
7.2.5 Manual test assistant 26
7.2.6 Tool bridge 26
7.2.7 Test execution environment and test execution engine 26
7.2.8 Keyword library 26
7.2.9 Data 27
7.2.10 Script repository 27
7.2.11 Documentation and organizational processes 27
7.3 Basic attributes of the keyword-driven testing framework 27
7.3.1 General information on basic attributes 27
7.3.2 Documentation 27

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7.3.3 Keyword-driven editor (tool) 28
7.3.4 Decomposer and data sequencer 29
7.3.5 Manual test assistant (tool) 29
7.3.6 Tool bridge 29
7.3.7 Test execution engine 29
7.3.8 Keyword library 30
7.3.9 Script repository 30
7.4 Advanced attributes of frameworks 30
7.4.1 General information on advanced attributes 30
7.4.2 Documentation 30
7.4.3 Keyword-driven editor (tool) 31
7.4.4 Decomposer and data sequencer 31
7.4.5 Manual test assistant 31
7.4.6 Tool bridge 31
7.4.7 Test execution environment and test execution engine 31
7.4.8 Keyword library 32
7.4.9 Test data support 33
7.4.10 Script repository 33
8 Data interchange **33**
Annex A (informative) **Typical keyword conventions** **34**
Annex B (informative) **Benefits and issues of keyword-driven testing** **35**
Annex C (informative) **Getting started with keyword-driven testing** **37**
Annex D (informative) **Roles and tasks** **39**
Annex E (informative) **Basic keywords** **41**
Annex F (informative) **Examples of the application of keywords** **47**
Annex G (informative) **Example data format for keywords** **51**
Bibliography **55**
IEEE notices and abstract **56**

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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).

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This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 7, *Software and systems engineering*, in cooperation with the Systems and Software Engineering Standards Committee of the IEEE Computer Society, under the Partner Standards Development Organization cooperation agreement between ISO and IEEE.

This second edition cancels and replaces the first edition (ISO/IEC/IEEE 29119-5:2016), which has been technically revised.

The main changes are as follows:

— updated reference to processes (test design and implementation process) according to ISO/IEC/IEEE 29119-2:2021;

— updated reference to documents (test procedure) according to ISO/IEC/IEEE 29119-3:2021;

— included definitions for terms used in this document, based on ISO/IEC/IEEE 29119-1:2022.

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.

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Introduction

The purpose of the ISO/IEC/IEEE 29119 series 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 and using any life cycle.

This document defines a unified approach for describing test cases in a modular way, which assists with the creation of items like keyword-driven test specifications and test automation frameworks. The term "keyword" refers to the elements which are, once defined, used to compose test cases, such as with building blocks. This document explains the main concepts and application of keyword-driven testing. It also defines attributes of frameworks designed to support keyword-driven testing.

The concepts relating to software testing defined in ISO/IEC/IEEE 29119-1 are also applicable to this document.

The test process model on which the keyword-driven testing framework is based is defined in ISO/IEC/IEEE 29119-2. It comprises test process descriptions that define the software testing processes at the organizational level, test management level and dynamic test level. Supporting diagrams describing the processes are also provided in ISO/IEC/IEEE 29119-2. However, this document describes a specific implementation of the test design and implementation process of ISO/IEC/IEEE 29119-2 for application in keyword-driven testing, in particular in TD3 (6.6.4) and TD4 (6.6.5).

The templates and examples of test documentation as defined in ISO/IEC/IEEE 29119-3 are also applicable to this document.

Software test design techniques that can be used during test design are defined in ISO/IEC/IEEE 29119-4. The application of ISO/IEC/IEEE 29119-4 is assumed when designing test cases that are then described by keywords according to this document.

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Software and systems engineering — Software testing —

Part 5: Keyword-driven testing

1 Scope

This document defines an efficient and consistent solution for keyword-driven testing by:

— giving an introduction to keyword-driven testing;

— providing a reference approach to implement keyword-driven testing;

— defining requirements on frameworks for keyword-driven testing to enable testers to share their work items, such as test cases, test data, keywords, or complete test specifications;

— defining requirements for tools that support keyword-driven testing; these requirements are applicable to any tool that supports the keyword-driven approach (e.g. test automation, test design and test management tools);

— defining interfaces and a common data exchange format to ensure that tools from different vendors can exchange their data (e.g. test cases, test data and test results);

— defining levels of hierarchical keywords, and advising use of hierarchical keywords; this includes describing specific types of keywords (e.g. keywords for navigation or for checking a value) and when to use "flat" structured keywords;

— providing an initial list of example generic technical (low-level) keywords, such as "inputData" or "checkValue"; these keywords can be used to specify test cases on a technical level and can be combined to create business-level keywords as required.

This document is applicable to all those who want to create keyword-driven test specifications, create corresponding frameworks, or build test automation based on keywords.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO, IEC and IEEE 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/

— IEEE Standards Dictionary Online: available at https://ieeexplore.ieee.org/xpls/dictionary.jsp

NOTE For additional 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 https://www.computer.org/sevocab.

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