INTERNATIONAL ISO/

14764

Third edition
2022-01

Software engineering — Software life cycle processes — Maintenance

Ingénierie du logiciel — Processus du cycle de vie du logiciel — Maintenance

Reference number
ISO/IEC/IEEE 14764:2022(E)

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Institute of Electrical and Electronics Engineers, Inc
3 Park Avenue, New York
NY 10016-5997, USA

Email: stds.ipr@ieee.org
Website: www.ieee.org

Published in Switzerland

Contents

Page

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 ISO/IEC documents should be noted. This document was drafted in accordance with the rules given in the ISO/IEC Directives, Part 2 (see www.iso.org/directives or www.iec.ch/members_experts/refdocs).

IEEE Standards documents are developed within the IEEE Societies and the Standards Coordinating Committees of the IEEE Standards Association (IEEE-SA) Standards Board. The IEEE develops its standards through a consensus development process, approved by the American National Standards Institute, which brings together volunteers representing varied viewpoints and interests to achieve the final product. Volunteers are not necessarily members of the Institute and serve without compensation. While the IEEE administers the process and establishes rules to promote fairness in the consensus development process, the IEEE does not independently evaluate, test, or verify the accuracy of any of the information contained in its standards.

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 are 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 https://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.

ISO/IEC/IEEE 14764 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 7, *Systems and software 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 third edition cancels and replaces the second edition (ISO/IEC 14764:2006), which has been technically revised.

The main changes compared to the previous edition are as follows:

— alignment of the standard with ISO/IEC/IEEE 12207:2017 and updates to other ISO/IEC JTC1/SC7 standards;

— introduction of modern approaches to “maintenance”.

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

This document provides guidance on the software maintenance process. Maintenance is a technical process in the life cycle of a software product, as described in ISO/IEC/IEEE 12207. The maintenance process contains the activities and tasks of the maintenance organization. This document is the result of the harmonization of ISO/IEC 14764 and IEEE Std 1219, and the update for ISO/IEC/IEEE 12207:2017.

Because maintenance consumes a major share of a software life cycle financial resources, it should be an important project consideration.

During operation of the software, problems may be detected that were not detected during verification, validation and acceptance. Therefore, a maintenance effort is needed to cope with these problems. This maintenance effort also covers software improvements needed to meet new or modified user requirements. Software maintenance is commonly needed when upgrading system components, such as operating systems and databases, as well as when changes are made to external software and systems' interfaces. Software maintenance is typically a significant portion of life cycle costs, even when a part of the system under maintenance includes COTS software.

Software maintenance organizations uses a number of specific tools, methods, and techniques. This document does not specify how to implement or perform the activities and tasks in the software maintenance process since these are dependent upon the formal agreement and organizational requirements. Maintenance is required on all types of software, whatever the technology, technique, or tool used to create it.