International Standard

ISO/IEC 25002

Systems and software engineering — Systems and software Quality Requirements and Evaluation (SQuaRE) — Quality model overview and usage

First edition
2024-03

Reference number
ISO/IEC 25002:2024(en)

© ISO/IEC 2024

COPYRIGHT PROTECTED DOCUMENT

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 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).

ISO and IEC draw attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO and IEC take no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO and IEC had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents and https://patents.iec.ch. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

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 JTC 1, *Information technology*, Subcommittee SC 7, *Software and systems engineering.*

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

A wide variety of organizational functions and personal activities are increasingly performed by information systems and IT services. Therefore, high-quality information systems and IT services are essential to providing value and avoiding potential negative consequences for their stakeholders. Unfortunately, quality assurance has traditionally focused primarily on functional requirements, giving far less attention to the non-functional attributes of a system/product. Comprehensive specification, design, and evaluation of all quality attributes of information systems and IT services are critical to optimizing the value of information systems to their stakeholders.

The comprehensive specification of quality characteristics associated with a specific type of information system is represented in a quality model. A quality model can be used as an objective reference supporting requirements definition, evaluation, and validation/verification. By establishing an international agreement on quality characteristics and their measurement, the SQuaRE family of standards provides a framework for reliable world-wide development and delivery of information systems and IT services.

This document is intended to provide guidelines for interpreting and using ISO/IEC 25010, ISO/IEC TS 25011, ISO/IEC 25012, ISO/IEC 25019, and other SQuaRE quality models to be published in the future. Quality models in the SQuaRE family can guide the development of quality measures and evaluation processes used to provide evidence that information systems, ICT products, data, and IT services have the capability to perform their role in achieving the sustainable development goals of SDGs 4, 9, and 11.

This document introduces the structure of SQuaRE quality models and provides requirements for developing them. This document describes how SQuaRE quality models in the quality model division (ISO/IEC 2501n) can be used in conjunction with other SQuaRE standards to guide quality-related activities across the information system lifecycle. These quality models can guide the development of measures for evaluating the quality of information systems and IT services to meet the requirements of their stakeholders. These models provide a common language for describing quality characteristics that can be understood by all stakeholders and should be considered in defining product requirements. They also provide a basis for defining standard quantitative measures of quality characteristics for evaluating the quality properties of a target entity.

The complexity of information systems has grown exponentially with the advent of modern digital technologies. This complexity elevates the importance of non-functional requirements and qualities. SQuaRE quality models can help guide the development of modern digital technologies that are trustworthy and that delight their users.

This document is a part of the SQuaRE series of International Standards, which consists of the following divisions:

— quality management division;

— quality model division;

— quality measurement division;

— quality requirements division;

— quality evaluation division;

— SQuaRE extension division.

Figure 1 (adapted from ISO/IEC 25000) illustrates the organization of the SQuaRE family of International Standards. Similar standards are grouped into divisions. Each division provides guidance and resources for performing a different function in ensuring system and software product quality.