INTERNATIONAL STANDARD

ISO/IEC 20246

First edition
2017-02

Software and systems engineering — Work product reviews

Ingénierie du logiciel et des systèmes — Revue des produits de travail

Reference number
ISO/IEC 20246:2017(E)

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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. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

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).

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).

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

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 World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 7, *Software and systems engineering*.

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Introduction

The purpose of this document is to provide an International Standard that defines work product reviews, such as inspections, reviews and walkthroughs that can be used at any stage of the software and systems life cycle. It can be used to review any system or software work product. This document defines a generic process for work product reviews that can be configured based on the purpose of the review and the constraints of the reviewing organization. The intent is to describe a generic process that can be applied both efficiently and effectively by any organization to any work product.

The main objectives of reviews are to detect issues, to evaluate alternatives, to improve organizational and personal processes, and to improve work products. When applied early in the life cycle, reviews are typically shown to reduce the amount of unnecessary rework on a project. The work product review techniques presented in this document can be used at various stages of the generic review process to identify defects and evaluate the quality of the work product.

Review documents that are produced during work product reviews are defined in Annex A.

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Software and systems engineering — Work product reviews

1 Scope

This document establishes a generic framework for work product reviews that can be referenced and used by all organizations involved in the management, development, test and maintenance of systems and software. It contains a generic process, activities, tasks, review techniques and documentation templates that are applied during the review of a work product. A work product is any artefact produced by a process. This document defines work product reviews that can be used during any phase of the life cycle of any work product. This document is intended for, but not limited to, project managers, development managers, quality managers, test managers, business analysts, developers, testers, customers and all those involved in the development, testing and maintenance of systems and software.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC/IEEE 24765, *Systems and software engineering — Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC/IEEE 24765 and the following apply.

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

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

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

3.1
ad hoc reviewing
unstructured independent review technique

3.2
author check
informal review performed by the author of the work product

3.3
buddy check
informal review performed independently by a colleague of the author

3.4
checklist-based reviewing
review technique guided by a list of questions or required attributes

3.5
formal review
form of review that follows a defined process with formal documented output

3.6
informal review
form of review that does not follow a defined process and has no formal documented output

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3.7
informal group review
informal review performed by three or more persons

3.8
inspection
formal review of a work product to identify issues, which uses defined team roles and measurement to improve the review process

EXAMPLE Fagan Inspections[7] are a specific type of inspection and code inspections are used to review program source code.

3.9
issue
observation that deviates from expectations

EXAMPLE Potential defect, improvement or point needing clarification.

3.10
milestone review
formal review of a work product and supporting evidence used to determine its acceptability for use in the next stage of development or for delivery

Note 1 to entry: The requirement for this form of review is normally specified in the project plan.

3.11
page-by-page reviewing
technique where reviewers review a work product in a sequential order

3.12
pair review
informal review of a work product performed by two suitably qualified people other than the author working together

3.13
peer desk check
informal review where the author and a colleague walk through a work product

3.14
peer review
review of work products performed by others qualified to do the same work

3.15
perspective-based reading
form of role-based reviewing that uses checklists and involves the creation of prototype deliverables to check the completeness and other quality characteristics of the work product

3.16
role-based reviewing
technique where reviewers review a work product from the perspective of different stakeholder roles

EXAMPLE Typical stakeholder roles include specific user types, such as work product maintainer, tester and developer.

3.17
scenario-based reviewing
technique where the review is guided by determining the ability of the work product to address specific scenarios

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3.18
technical review
formal peer review of a work product by a team of technically-qualified personnel that examines the suitability of the work product for its intended use and identifies discrepancies from specifications and standards

Note 1 to entry: Technical review may also provide recommendations of alternatives and examination of various alternatives.

3.19
walkthrough
formal review in which an author leads members of the review through a work product, and the participants ask questions and make comments about possible issues

3.20
work product
artefact produced by a process

EXAMPLE Project plan, requirements specification, design documentation, source code, test plan, test meeting minutes, schedules, budgets, and incident reports.

Note 1 to entry: A subset of the work products can be baselined to be used as the basis of further work and some will form the set of project deliverables.

4 Conformance

4.1 Intended usage

The normative requirements in this document are contained in Clause 6 and Annex A. It is recognized that particular projects or organizations may not need to use all of the techniques defined by this document. Therefore, implementation of this document typically involves selecting a set of techniques suitable for the project or organization. There are two ways that an organization or individual can claim conformance to the provisions of this document. The organization or individual shall assert whether full or tailored conformance to this document is claimed.

4.2 Full conformance

Full conformance is achieved by demonstrating that all of the requirements (i.e. “shall” statements) of the work product review process defined in Clause 6 and the review documentation annex of this document have been satisfied.

4.3 Tailored conformance

When this document is used as a basis for establishing a review process that does not qualify for full conformance, the subset of activities for which tailored conformance is claimed, is recorded. Tailored conformance is achieved by demonstrating that all of the requirements (i.e. “shall” statements) for the recorded subset of activities have been satisfied.

Where tailoring occurs, justification shall be provided (either directly or by reference), whenever an activity defined in Clause 6 of this document is not followed. All tailoring decisions shall be recorded with their rationale, including the consideration of any applicable risks. Tailoring decisions shall be agreed by the relevant stakeholders.

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