Technical Specification

ISO/IEC TS 33060

Second edition
2025-04

Information technology — Process assessment — Process assessment model for system life cycle processes

Technologies de l'information — Évaluation du processus — Modèle d'évaluation du processus pour les processus du cycle de vie du système

Reference number
ISO/IEC TS 33060:2025(en)

© ISO/IEC 2025

COPYRIGHT PROTECTED DOCUMENT

© ISO/IEC 2025

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

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

Published in Switzerland

Contents

Page

Foreword ..... **v**
Introduction ..... **vi**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **1**
4 The process assessment model **1**
4.1 General 1
4.2 Structure of the process assessment model 2
4.2.1 General 2
4.2.2 Processes 3
4.2.3 Process dimension 3
4.2.4 Quality dimension 3
4.3 Assessment indicators 4
5 The process dimension **5**
5.1 General 5
5.2 Agreement processes (AGR) 5
5.2.1 General 5
5.2.2 Acquisition process 6
5.2.3 Supply process 7
5.3 Organizational project-enabling processes (ORG) 8
5.3.1 General 8
5.3.2 Life cycle model management process 9
5.3.3 Infrastructure management process 10
5.3.4 Portfolio management process 11
5.3.5 Human resource management process 12
5.3.6 Quality management process 13
5.3.7 Knowledge management process 14
5.4 Technical management processes (MAN) 15
5.4.1 General 15
5.4.2 Project planning process 16
5.4.3 Project assessment and control process 17
5.4.4 Decision management process 19
5.4.5 Risk management process 20
5.4.6 Configuration management process 21
5.4.7 Information management process 23
5.4.8 Measurement process 24
5.4.9 Quality assurance process 25
5.5 Technical processes (TEC) 26
5.5.1 General 26
5.5.2 Business or mission analysis process 27
5.5.3 Stakeholder needs and requirements definition process 28
5.5.4 System requirements definition process 30
5.5.5 System architecture definition process 31
5.5.6 Design definition process 34
5.5.7 System analysis process 36
5.5.8 Implementation process 38
5.5.9 Integration process 39
5.5.10 Verification process 41
5.5.11 Transition process 42
5.5.12 Validation process 44
5.5.13 Operation process 46
5.5.14 Maintenance process 47
5.5.15 Disposal process 49

© ISO/IEC 2025 – All rights reserved

6 The quality dimension **50**
Annex A (informative) **Process outputs** **52**
Bibliography **65**

© ISO/IEC 2025 – All rights reserved

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*.

This second edition cancels and replaces the first edition (ISO/IEC TS 33060:2020), which has been technically revised.

The main changes are as follows:

— processes, process purposes, and process outcomes are revised to reflect the ISO/IEC/IEEE 15288:2023 processes;

— base practices are revised to reflect the ISO/IEC/IEEE 15288:2023 activities and tasks;

— process outputs and their descriptions are revised;

— this process assessment model includes a process quality attribute of process performance and can be used with other models of process quality, for instance capability as described in ISO/IEC 33020.

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.

© ISO/IEC 2025 – All rights reserved

Introduction

The set of International Standards ISO/IEC 33001 to ISO/IEC 33099 defines the requirements and resources needed for process assessment. The overall architecture and content of the series is described in ISO/IEC 33001.

This document defines a process assessment model for system life cycle processes, conformant with the requirements of ISO/IEC 33004, for use in performing a conformant assessment in accordance with the requirements of ISO/IEC 33002.

A process assessment model is related to one or more process reference models. The process reference model defined in ISO/IEC/IEEE 15288 is used as the basis for the process assessment model in this document.

A process assessment model incorporates a process measurement framework conformant with the requirements of ISO/IEC 33003 and is expressed as a process quality characteristic with a defined set of process attributes.

A process assessment model includes a set of assessment indicators. Process performance indicators address the process purpose and outcomes of each process in the process assessment model. Process quality indicators demonstrate the achievement of the process attributes in the process measurement framework. These indicators may also provide a reference source of practices when implementing a process improvement program.

The assessment indicators are used as a basis for collecting objective evidence to support an assessor's judgement in assigning ratings of the performance and quality of an implemented process. The set of indicators defined in this document is not intended to be an all-inclusive set and applicable in its entirety. Subsets appropriate to the context and scope of the assessment should be selected, and potentially augmented with additional indicators.

A process assessment is conducted according to a documented assessment process. A documented assessment process identifies the rating method to be used in rating process attributes and identifies or defines the aggregation method to be used in determining ratings.

ISO/IEC 33020 provides a process measurement framework for the assessment of process capability which may be incorporated as a process measurement framework in this document. ISO/IEC 33020:2019, Annex B includes a set of process quality indicators for each process attribute in the process measurement framework.

© ISO/IEC 2025 – All rights reserved

Information technology — Process assessment — Process assessment model for system life cycle processes

1 Scope

This document defines a process assessment model for system life cycle processes, conformant with the requirements of ISO/IEC 33004, for use in performing a conformant assessment in accordance with the requirements of ISO/IEC 33002.

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 15288:2023, *Systems and software engineering — System life cycle processes*

ISO/IEC 33001, *Information technology — Process assessment — Concepts and terminology*

ISO/IEC 33003, *Information technology — Process assessment — Requirements for process measurement frameworks*

ISO/IEC 33004, *Information technology — Process assessment — Requirements for process reference, process assessment and maturity models*

© ISO/IEC 2025 – All rights reserved