



# Technical Specification

**ISO/IEC TS 33062**

## **Information technology — Process assessment — Process assessment model for quantitative processes to support higher levels of process capability in ISO/IEC 33020**

*Technologies de l'information — Évaluation du processus —  
Modèle d'évaluation du processus pour les processus quantitatifs  
pour prendre en charge des niveaux plus élevés de capacité du  
processus dans l'ISO/IEC 33020*

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## Foreword

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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*.

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](http://www.iso.org/members.html) and [www.iec.ch/national-committees](http://www.iec.ch/national-committees).

## Introduction

The standards on process assessment developed by ISO/IEC JTC 1/SC 7 define the requirements and resources needed for process assessment. The overall architecture and content of standards on process assessment developed by ISO/IEC JTC 1/SC 7 is described in ISO/IEC 33001. Several standards on process assessment developed by ISO/IEC JTC 1/SC 7 are intended to replace and extend parts of the ISO/IEC 15504 series. Abstracts and previews of on process assessment developed by ISO/IEC JTC 1/SC 7 can be found on the ISO and IEC websites.

A process assessment model is related to one or more process reference models. The process reference model for quantitative processes is used as the basis for the process assessment model in this document.

A process assessment model incorporates a process measurement framework conforming to 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 are 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.

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# Information technology — Process assessment — Process assessment model for quantitative processes to support higher levels of process capability in ISO/IEC 33020

## 1 Scope

This document defines a process assessment model for quantitative processes, conforming to the requirements of ISO/IEC 33004, for use in performing a process 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 33001, *Information technology — Process assessment — Concepts and terminology*

ISO/IEC 33004:2015, *Information technology — Process assessment — Requirements for process reference, process assessment and maturity models*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 33001 apply.

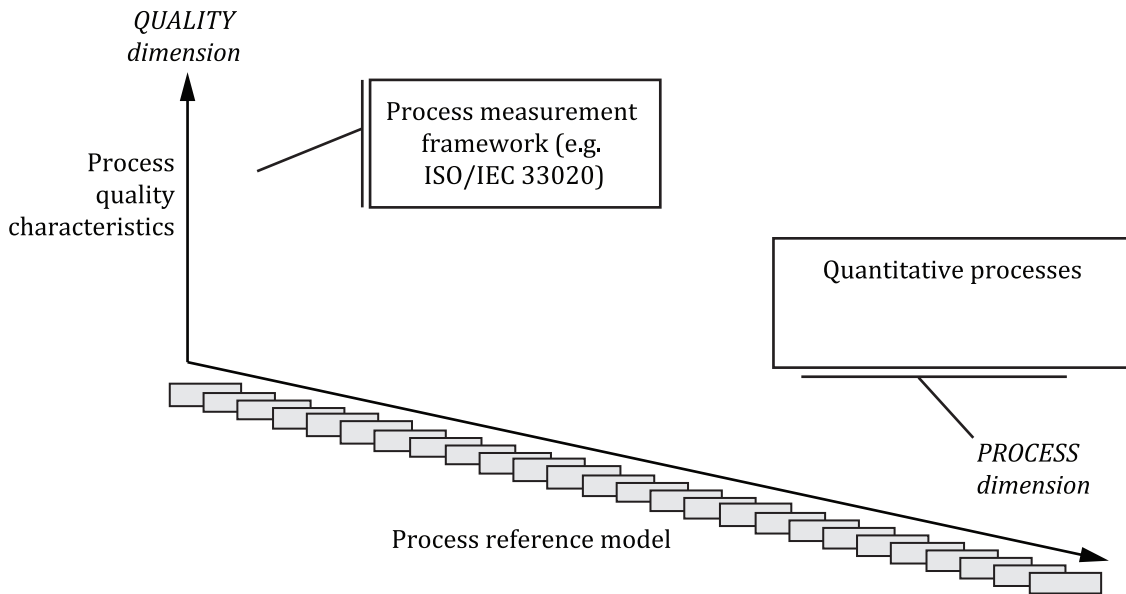
ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

## 4 The process assessment model

### 4.1 General

This document provides a basis for a process assessment model that is two-dimensional. In one dimension, the process dimension, the processes are defined and classified into process groups together with the set of assessment indicators of process performance. In the other dimension, the quality dimension, for each process attribute in the process measurement framework a set of process quality indicators is defined for the selected process quality characteristic.



**Figure 1 — Structure of the process assessment model**

Figure 1 shows the process assessment model as a two-dimensional model, the process dimension with its relationship to quantitative processes, and the quality dimension in relationship to a process measurement framework.

Users of this document may freely reproduce the detailed descriptions contained in the assessment model as part of any tool or other material to support the performance of process assessments, so that it can be used for its intended purpose.

## 4.2 Structure of the process assessment model

### 4.2.1 General

This subclause describes the detailed structure of the process assessment model and its key components.

The process dimension comprises the set of processes defined with process purpose and process outcomes together with a set of assessment indicators of process performance.

Processes included in a process reference model shall be in accordance with ISO/IEC 33004:2015, 5.4.

The processes in this document meet the ISO/IEC 33004 requirements for process descriptions, process purposes and outcomes.

The quality dimension comprising a set of process attributes for a selected process quality characteristic is incorporated as a process measurement framework together with a set of process quality indicators.

NOTE ISO/IEC 33020 provides a process measurement framework for the assessment of process capability which can be incorporated into this document. ISO/IEC 33020 also includes a set of process quality indicators for each process attribute in the process measurement framework.

### 4.2.2 Processes

Figure 2 lists the processes that are included in the process dimension of the process assessment model and shows their classification into a process group.

The process group and its associated processes are described in Clause 5. The description of each process group includes a characterization of the processes it contains. In this process assessment model, each process belonging to a group is identified with a process identifier [ID] consisting of the group abbreviated name and the sequential number of the process in that group.



Quantitative processes (QNT)  
 QNT.1 Quantitative performance management  
 QNT.2 Quantitative process improvement

**Figure 2 — Process groups**

#### 4.2.3 Process dimension

Each process is described in terms of a purpose statement. These statements contain the unique functional objectives of the process when performed in a particular environment. A list of specific process outcomes is associated with each of the process purpose statements, as a list of expected positive results of the process performance.

#### 4.2.4 Quality dimension

For the quality dimension, the minimum requirement is that the process is performed, i.e. the implemented process achieves its process purpose and the expected outcomes are observable.

Process attributes are features of a process that can be evaluated on a scale of achievement, providing a measure of the quality of the process and are applicable to all processes.

### 4.3 Assessment indicators

A process assessment model is based on the principle that the quality of a process can be assessed by demonstrating the achievement of process attributes on the basis of evidences related to assessment indicators.

There are two types of assessment indicators: process performance indicators and process quality indicators. Process performance indicators address the process purpose and outcomes of each process in the process dimension. Process quality indicators demonstrate the achievement of the process attributes in the quality dimension.

The process performance indicators are:

- base practice (BP);
- process input (PI);
- process output (PO).

The performance of base practices (BPs) provides an indication of the extent of achievement of the process purpose and process outcomes. Process outputs (POs) are either used or produced (or both), when performing the process. Information items that are the key outputs of the processes are primarily used as performance indicators.

[Annex A](#) provides the list of process outputs associated with the processes in [Clause 5](#). The process outputs are identified by categories. The process outputs are indicated by process IDs.

Process quality indicators depend on the process quality characteristic of interest. The minimum requirement is that at least one of the process attributes shall comprise the achievement of the defined process purpose and process outcomes for the process; this is termed the process performance attribute (see ISO/IEC 33003:2015, 4.2.1). Other process quality attributes can be defined as needed.

The process performance and process quality indicators represent types of objective evidence that might be found in an instantiation of a process and therefore could be used to judge achievement of quality. [Figure 3](#) shows how the assessment indicators are related to process performance and process quality.

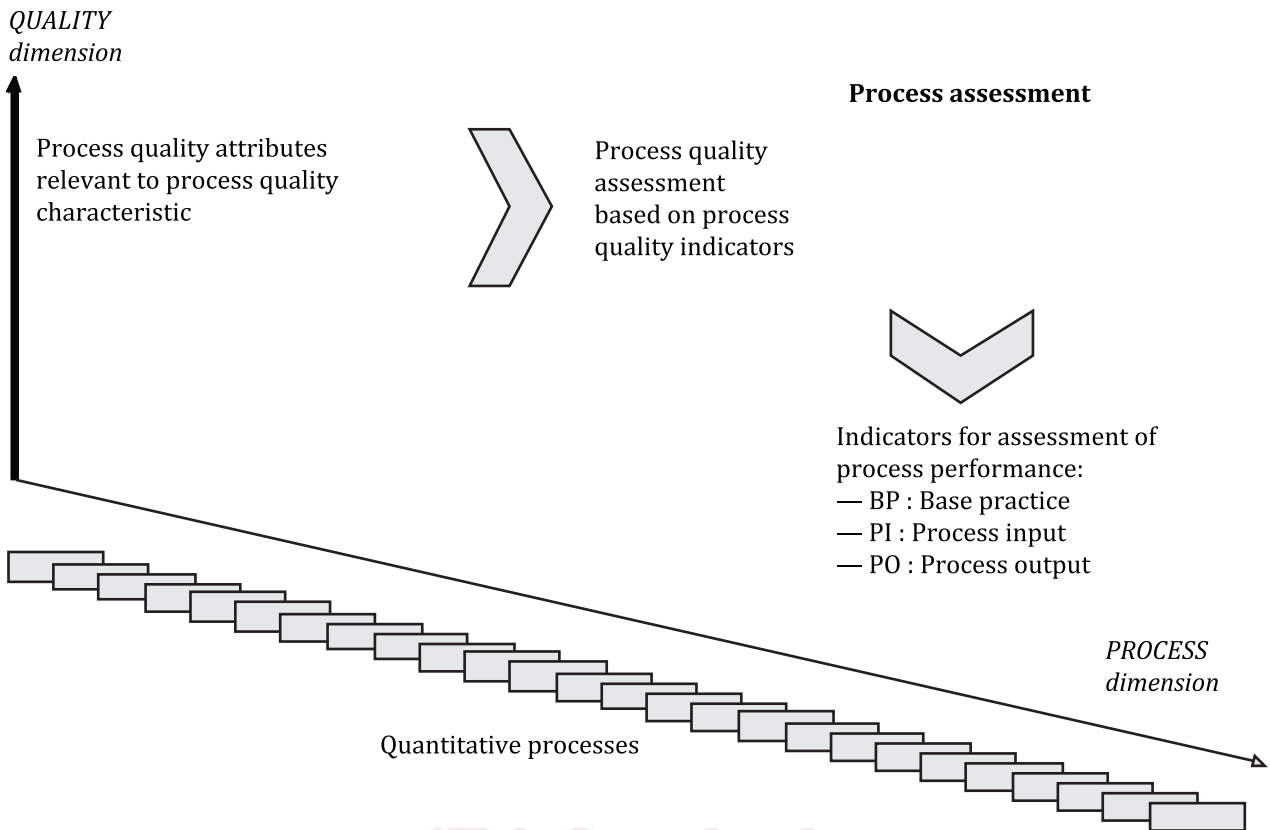


Figure 3 — Assessment indicators

## 5 The process dimension

### 5.1 General

The process dimension comprises the set of processes defined with process purpose and process outcomes together with a set of assessment indicators of process performance.

The individual processes each have a process identifier [ID] consisting of the process group abbreviated name and the sequential number of the process in that group and are described in terms of process name, process purpose, and process outcomes as described in ISO/IEC/IEEE 24774.

In addition, the process dimension of the process assessment model provides information in the form of a set of:

- a) base practices for the process providing a definition of the tasks and activities needed to accomplish the process purpose and fulfil the process outcomes; each base practice is associated to one or more process outcomes; and
- b) process outputs that are related to one or more process outcomes.

The process purposes, outcomes, base practices and process outputs associated with the processes are included in this clause. The base practices and process outputs constitute the set of indicators of process performance.

A documented assessment process and assessor judgment is needed to ensure that process context (application domain, business purpose, development methodology, size of the organization, etc.) is considered when using this information.