



# Technical Report

**ISO/IEC TR 33023**

## Information technology — Process assessment — Application of ISO/ IEC TS 33073 processes to the ISO/IEC 33020 process capability measurement scale

*Technologies de l'information — Évaluation du processus —  
Application des processus ISO/IEC TS 33073 à l'échelle de la  
mesure de la capacité de processus de l'ISO/IEC 33020*

**First edition  
2024-10**

[ISO/IEC TR 33023:2024](https://standards.iteh.ai/catalog/standards/iso/045aa66e-73e9-444e-b6d2-1987061d011c/iso-iec-tr-33023-2024)

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Published in Switzerland

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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

This document provides a mapping of the ISO/IEC TS 33073 processes to the ISO/IEC 33020 process attributes with the intent of demonstrating support for the levels 1 to 3 of the ISO/IEC 33020 process capability measurement framework.

This document is primarily addressed to developers of process assessment models for the process quality characteristic of process capability. It is also addressed to the lead assessor and other stakeholders, such as the sponsor of the assessment, who need to be assured that the requirements of the ISO/IEC 33020 process measurement framework have been met.

Within this document:

- [Clause 4](#) provides a summary description of the relationship between the ISO/IEC 33020 process attribute outcomes and the ISO/IEC TS 33073 processes.
- [Annex A](#) extends the summary mapping in [Clause 4](#) by providing details of the relationship between the ISO/IEC 33020 process attribute outcomes and the ISO/IEC TS 33073 process outcomes. Links to the information items listed in [Annex C](#) are identified. These details are provided for validating by inspection the relationships between the ISO/IEC 33020 process attribute outcomes and the ISO/IEC TS 33073 process outcomes.
- [Annex B](#) focuses on the relationships between the generic practices associated with ISO/IEC 33020 and the ISO/IEC TS 33073 base practice descriptions. These model elements are linked via the information item characteristics listed in [Annex C](#).
- [Annex C](#) provides a listing of the applicable information items and their characteristics.
- [Annex D](#) provides an overview of the key concerns arising from the application of ISO/IEC/IEEE 24774 when attempting to demonstrate objective relationships between process model elements.

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# Information technology — Process assessment — Application of ISO/IEC TS 33073 processes to the ISO/IEC 33020 process capability measurement scale

## 1 Scope

This document provides a specification for associating the processes of ISO/IEC TS 33073 with the process attribute outcomes of ISO/IEC 33020 with the intent of demonstrating support for levels 1 to 3 of the process capability measurement scale defined in ISO/IEC 33020.

## 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 vocabulary*

## 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/>

<https://standards.iteh.ai/catalog/standards/iso/045aa66e-73e9-444e-b6d2-1987061d011c/iso-iec-tr-33023-2024>

## 4 Content of the process capability measurement framework

### 4.1 General

In ISO/IEC 33020:2019, Clause 5 the relationship between process attributes and process capability levels is described.

Process capability is defined in ISO/IEC 33020:2019 Clause 5 on a six-point ordinal scale that enables process capability to be assessed from the bottom of the scale, 'incomplete', through to the top end of the scale, 'innovating'. The scale represents increasing capability of an implemented process, from failing to achieve the process purpose through to continually improving and able to respond to process change.

The relationship between the process capability levels and the process attributes is show in [Table 1](#). In addition, a summary view is presented of the relationship of the process attributes to the processes associated with ISO/IEC TS 33073.

The process ORG-03 supplier management from ISO/IEC TS 33073:2017 do not appear in the list in [Table 1](#). The outcomes of this process do not have any discernible relationship to the process attribute outcomes of ISO/IEC 33020.

The name of the process ORG-01 (asset management) has been renamed in this document as customer property management in order to bring it in line with the intent of ISO 9001:2015, 8.5.3 (property belonging to customers or external providers).

## ISO/IEC TR 33023:2024(en)

A knowledge management process (COM-12) has been added to the ISO/IEC TS 33073 common processes list. This process has been added to support the intent of ISO 9001:2015, 7.1.6 (organizational knowledge). In order to support the intent of ISO/IEC 33020:2019 PA 3.1 and 3.2, COM-12 is supported in this document as COM-12A (Knowledge Management: Establish) and as COM-12B (Knowledge Management: Maintain).

**Table 1 — Relationship between the ISO/IEC 33020 process capability levels and process attributes, and the ISO/IEC TS 33073 processes**

Process capability level	ISO/IEC 33020:2019 process attribute outcomes	Reference	ISO/IEC TS 33073:2017 processes
1	5.2.3.2 PA 1.1 Process performance process attribute	-	The processes in this group are typically identified in the assessment scope. Certain processes in ISO/IEC TS 33073, namely, ORG-01, and members of the TEC process group, are likely candidates.
2	5.2.4.2 PA 2.1 Performance management process attribute	COM-01	Communication management
		COM-11	Risk management
		TEC-05.1	Product/service planning
		TEC-05.2	Product/service control
2	5.2.4.3 PA 2.2 Documented information management process attribute	COM-02	Documentation management
		TEC-01	Configuration management
3	5.2.5.2 PA 3.1 Process definition process attribute	COM-03.1	Human resource management: Determine competencies
		COM-08	Operational planning
		COM-10.1	Performance evaluation: Establish
		COM-12.1	Knowledge management: Establish
		TOP-01	Leadership
3	5.2.5.3 PA 3.2 Process deployment process attribute	COM-03.2	Human resource management: Provide competencies
		COM-06	Management review
		COM-09	Operational implementation and control
		COM-12.2	Knowledge management: Maintain
		ORG-02	Measurement resource management
3	5.2.5.4 PA 3.3 Process assurance process attribute	COM-04	Improvement
		COM-05	Internal audit
		COM-07	Non-conformity management
		COM-10.2	Performance evaluation: Perform
		TEC-02	Process changes

### 4.2 Relationships between model elements

The rationale for the selection of the ISO/IEC TS 33073 processes and their associations with the ISO/IEC 33020 process attribute outcomes can be found in [Annexes A](#) and [B](#).

[Annex A](#) elaborates the summary mapping in [Clause 4](#) by providing extended details of the relationship between the ISO/IEC 33020 process attribute outcomes and the ISO/IEC TS 33073 process outcomes. Links to the information items described in [Annex C](#) are provided in a summary format. The level of detail provides the basis for validating by inspection the relationships between the ISO/IEC 33020 process attribute outcomes and the ISO/IEC TS 33073 process outcomes.

[Annex B](#) focuses on the relationships between the ISO/IEC 33020 generic practices and the ISO/IEC TS 33073 base practice descriptions. These model elements are linked via the information item characteristics, as listed in [Annex C](#).



**Annex A**  
(informative)

**Associations between the ISO/IEC 33020 process attribute outcomes, ISO/IEC TS 33073 process outcomes and information items**

**A.1 General**

This annex describes the relationships between the ISO/IEC 33020 process attribute outcomes and the ISO/IEC TS 33073 process outcomes. The model outcomes are linked by applicable information item characteristics, as described in [Annex D](#).

**A.2 Associations between the ISO/IEC 33020 process attribute outcomes, ISO/IEC TS 33073 processes and information items**

Information item characteristics provide the link between the ISO/IEC 33020 process attribute outcomes and the ISO/IEC TS 33073 process outcomes. Each linked information item in [Table A.1](#) is indicated by its reference label and name, and the reference number of the characteristic.

[Table A.1](#) provides the basis for a detailed validation by inspection of the associations between the ISO/IEC 33020 process attribute outcomes and ISO/IEC TS 33073 process outcomes in accordance with ISO/IEC/IEEE 24774:2021, Annex B model mapping considerations.

**Table A.1 — Associations between the ISO/IEC 33020 process attribute outcomes, ISO/IEC TS 33073 process outcomes and information item characteristics**

ISO/IEC 33020:2019 process attribute outcomes	Description	ISO/IEC TS 33073:2017 processes	Description	ISO/IEC TS 33073:2017 information items
5.2.3.2	<b>PA 1.1 Process performance process attribute</b> 1) the process achieves its defined process outcomes.	ORG-01	<b>Customer property management</b> 1) Items requiring customer property management are identified.	07-1 Product asset 1)
		ORG-01	<b>Customer property management</b> 2) Customer property status is known.	08-46 Product asset communication record 1)
		ORG-01	<b>Customer property management</b> 3) Changes to customer supplied product under management is controlled.	08-46 Product asset communication record 1)
		ORG-01	<b>Customer property management</b> 4) The integrity of customer supplied product is assured.	07-1 Product asset 2)
		TEC-03	<b>Product/ service changes</b> 1) Product/ service change requests are identified and classified.	11-13 Product/service design change request 1)

Table A.1 (continued)

ISO/IEC 33020:2019 process attribute outcomes	Description	ISO/IEC TS 33073:2017 processes	Description	ISO/IEC TS 33073:2017 information items
		TEC-03	<b>Product/ service changes</b> 2) Product/ service change requests are assessed using defined criteria.	08-54 Product/service design change evaluation result 1)
		TEC-04	<b>Product/ service design</b> 1) Design for each product/ service component is developed in accordance with defined requirements.	03-47 Product/service design 1)
		TEC-04	<b>Product/ service design</b> 2) External and internal interfaces for each product/ service component are defined.	03-47 Product/service design 2)
		TEC-06	<b>Product/ service quarantine</b> 1) Product/ service that does not conform to requirements is identified.	08-38 Nonconformity: Documentation 1)
		TEC-06	<b>Product/ service quarantine</b> 2) Nonconforming product/ service is placed under quarantine.	11-10 Nonconforming product quarantine request 1)
		TEC-06	<b>Product/ service quarantine</b> 3) Alternative approaches are identified regarding disposition of the nonconforming product/ service.	08-28 Nonconforming output disposition record 1)
		TEC-06	<b>Product/ service quarantine</b> 4) Agreed actions are taken regarding disposition of nonconforming product/ service.	08-32 Nonconforming product disposition evaluation result 1), 2)
		TEC-06	<b>Product/ service quarantine</b> 5) Product/ service that has been corrected is re-verified to demonstrate conformity to requirements.	08-35 Nonconforming product re-verification record 1)
		TEC-06	<b>Product/ service quarantine</b> 7) Product / service is released from quarantine when authorised.	08-33 Nonconforming product quarantine release authorisation 1)
		TEC-07	<b>Product/ service requirements</b> 1) The required characteristics and context of use of products/ services are identified.	12-23 Product/service requirements 5)
		TEC-07	<b>Product/ service requirements</b> 2) The constraints for a product/ service solution are defined.	12-23 Product/service requirements 8), 9), 10)
		TEC-07	<b>Product/ service requirements</b> 3) The requirements for the product/ service are defined.	12-23 Product/service requirements 1), 2), 3), 4), 6), 7), 11), 12)

Table A.1 (continued)

ISO/IEC 33020:2019 process attribute outcomes	Description	ISO/IEC TS 33073:2017 processes	Description	ISO/IEC TS 33073:2017 information items
		TEC-07	<b>Product/ service requirements</b> 4) The requirements for validating the product/ service are defined.	08-66 Product/service requirements review record 1)
		TEC-08	<b>Product/ service review</b> 1) Criteria for the review of product/ service is identified.	08-59 Product/service performance review record 3)
		TEC-08	<b>Product/ service review</b> 3) Required review activities are performed.	08-59 Product/service performance review record 1) 08-66 Product/service requirements review record 1)
		TEC-08	<b>Product/ service review</b> 4) Action items are identified.	08-59 Product/service performance review record 2) 08-66 Product/service requirements review record 2)
		TEC-09	<b>Product/ service supply</b> 2) Product/ service request(s) are evaluated in terms of mandated product/ service delivery criteria.	03-39 Management system strategy: supplier capability 1) 08-66 Product/service requirements review record 1)
		TEC-09	<b>Product/ service supply</b> 3) A response to a customer's product/ service request is produced.	08-65 Product/service requirements communication record 1)
		TEC-09	<b>Product/ service supply</b> 6) Conformity to applicable stated and implied customer and supplier requirements by internal processes and/or product/ service provided is verified.	03-50 Product/service objectives 2) 08-63 Product/service release approval record: Conformity 1)
		TEC-10	<b>Product/ service validation</b> 3) Required validation activities are performed.	08-72 Product/service validation record 1)
		TEC-11	<b>Product/ service verification</b> 3) Required verification activities are performed.	08-75 Product/service verification record 1), 2)

Table A.1 (continued)

ISO/IEC 33020:2019 process attribute outcomes	Description	ISO/IEC TS 33073:2017 processes	Description	ISO/IEC TS 33073:2017 information items
5.2.4.2	<b>PA 2.1 Performance management process attribute</b> 1) results to be achieved are determined and communicated;	TEC-05.1	<b>Product/service planning</b> 1) The objectives for the scope of the work associated with the development of the product/service are defined.	03-50 Product/service objectives 1) 04-06 Product/service lifecycle model: Establish 1), 2)
5.2.4.2	<b>PA 2.1 Performance management process attribute</b> 2) risks that can affect performance of the process are determined and addressed;	COM-11	<b>Risk management</b> 1) Criteria for the assessment of risks and the acceptable level of risk are identified.	03-57 Risk and opportunity identification criteria 1)
		COM-11	<b>Risk management</b> 2) Risks are identified.	08-79 Risks and opportunities: identification 1)
		COM-11	<b>Risk management</b> 6) Selected risks are treated.	08-78 Risk treatment action log 1)
		TEC-05.1	<b>Product/service planning</b> 6) Plans for the development of the product/service are developed.	04-08 Risk management planning 1) 04-09 Risk management planning: risk treatment effectiveness evaluation 1) 04-10 Risk management planning: risk treatment implementation 1) 04-11 Risk management planning: risk treatment options 1)
5.2.4.2	<b>PA 2.1 Performance management process attribute</b> 3) performance of the process is planned, monitored, measured, evaluated and adjusted (as needed);	TEC-05.1	<b>Product/service planning</b> 1) The objectives for the scope of the work associated with the development of the product/service are defined.	04-06 Product/service lifecycle model: Establish 13), 15)
		TEC-05.1	<b>Product/service planning</b> 2) The feasibility of achieving the objectives of the product/service development with available resources and constraints are evaluated.	08-57 Product/service feasibility review record 1)
		TEC-05.1	<b>Product/service planning</b> 3) The tasks and resources necessary to complete the product/service development are sized and estimated.	03-49 Product/service lifecycle model: Planning 4), 5), 6) 04-06 Product/service lifecycle model: Establish 6), 7), 8)

Table A.1 (continued)

ISO/IEC 33020:2019 process attribute outcomes	Description	ISO/IEC TS 33073:2017 processes	Description	ISO/IEC TS 33073:2017 information items
		TEC-05.1	<b>Product/service planning</b> 5) Interfaces between customer and relevant interested parties are identified.	04-06 Product/service lifecycle model: Establish 14)
		TEC-05.1	<b>Product/service planning</b> 6) Plans for the development of the product/service are developed.	03-46 Product/service delivery: Planning 1), 2), 3) 04-06 Product/service lifecycle model: Establish 5)
		TEC-05.2	<b>Product/service control</b> 5) Deviations in product/service performance from plans are investigated and analysed.	08-60 Product/service provision change evaluation record 2) 09-08 Product/service planning performance evaluation report 1)
		TEC-05.2	<b>Product/service control</b> 7) Corrective action is defined and directed, when product/service achievement is not meeting targets.	08-58 Product/service implementation record 1), 2), 3) 08-60 Product/service provision change evaluation record 1)
		TEC-05.2	<b>Product/service control</b> 8) Product/service replanning is initiated, as necessary.	08-64 Product/service release record 1)
		TEC-05.2	<b>Product/service control</b> 9) Product/service action to progress (or not) from one scheduled milestone or event to the next is authorized.	08-64 Product/service release record 1)
		TEC-05.2	<b>Product/service control</b> 10) Product/service objectives are achieved.	08-64 Product/service release record 1)
		5.2.4.2	<b>PA 2.1 Performance management process attribute</b> 4) responsibilities and authorities for performing the process are determined, assigned and communicated;	TEC-05.1

Table A.1 (continued)

ISO/IEC 33020:2019 process attribute outcomes	Description	ISO/IEC TS 33073:2017 processes	Description	ISO/IEC TS 33073:2017 information items
5.2.4.2	<b>PA 2.1 Performance management process attribute</b> 5) resources necessary for performing the process are determined, provided and maintained (as needed);	TEC-05.1	<b>Product/service planning</b> 3) The tasks and resources necessary to complete the product/service development are sized and estimated.	03-49 Product/service lifecycle model: Planning 1), 2), 3) 04-06 Product/service lifecycle model: Establish 10) 12-25 Product/service resource requirements 1)
		TEC-05.2	<b>Product/service control</b> 1) Performance measures or assessment results are available.	03-48 Product/service lifecycle model: Control 1)
		TEC-05.2	<b>Product/service control</b> 3) Adequacy of resources is assessed.	03-48 Product/service lifecycle model: Control 2)
		TEC-05.2	<b>Product/service control</b> 4) Progress reviews are performed.	03-48 Product/service lifecycle model: Control 1)
5.2.4.2	<b>PA 2.1 Performance management process attribute</b> 6) person(s) performing the process are competent on the basis of appropriate education, training, or experience;	TEC-05.1	<b>Product/service planning</b> 4) The responsibilities and authorities needed at each stage of product/service development are identified.	08-51 Product/service competencies: Provision: Planning 1)
		TEC-05.2	<b>Product/service control</b> 2) Adequacy of roles, responsibilities, accountabilities, and authorities is assessed.	08-50 Product/service competencies: Provision: Control 1)
5.2.4.2	<b>PA 2.1 Performance management process attribute</b> 7) interfaces between the involved parties are managed to ensure both effective communication and the level of control expected.	COM-01	<b>Communication management</b> 1) Information content is defined in terms of identified communication requirements.	12-02 Communication requirements 1)
		COM-01	<b>Communication management</b> 2) Parties to communicate with are identified.	12-02 Communication requirements 3)
		COM-01	<b>Communication management</b> 3) The party responsible for the communication is identified.	12-02 Communication requirements 5)
		COM-01	<b>Communication management</b> 4) Events that require communication actions are identified.	12-02 Communication requirements 2)
		COM-01	<b>Communication management</b> 5) The channel for the communication is selected.	12-02 Communication requirements 4)