PD ISO/IEC TS 33073:2017

BSI Standards Publication

Information technology — Process assessment — Process capability assessment model for quality management

Documents
Document Sharing Hub

Full document details: PD ISO/IEC TS 33073:2017

National foreword

This Published Document is the UK implementation of ISO/IEC TS 33073:2017.

The UK participation in its preparation was entrusted to Technical Committee IST/15 Software and systems engineering.

This technical specification refers to a process assessment that meets the requirements of ISO/IEC 33004, as well as guidance on interpretation of process purposes and outcomes within Information technology, as defined in ISO/IEC 33020. It is not the intent of this technical specification to imply that BS EN ISO 9001:2015 users need to adhere to the information contained in order to comply with ISO 9001.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2018
Published by BSI Standards Limited 2018

ISBN 978 0 580 97468 7

ICS 35.080

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 28 February 2018.

Amendments/corrigenda issued since publication

Date	Text affected

Documents
Document Sharing Hub

Full document details: PD ISO/IEC TS 33073:2017

TECHNICAL SPECIFICATION

ISO/IEC TS 33073

First edition
2017-11-01

Information technology — Process assessment — Process capability assessment model for quality management

Technologies de l'information — Évaluation des processus — Modèle d'évaluation de l'aptitude des processus pour le management de la qualité

Reference number
ISO/IEC TS 33073:2017(E)

Documents
Document Sharing Hub

© ISO/IEC 2017

Full document details: PD ISO/IEC TS 33073:2017

COPYRIGHT PROTECTED DOCUMENT

© ISO/IEC 2017, Published in Switzerland

All rights reserved. Unless otherwise specified, 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
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

© ISO/IEC 2017 – All rights reserved

Documents
Document Sharing Hub

Full document details: PD ISO/IEC TS 33073:2017

Contents

Page

Foreword ..... **v**
Introduction ..... **vi**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **1**
4 Overview of the Process Assessment Model (PAM) **2**
4.1 General 2
4.2 Structure of the Process Assessment Model 3
4.2.1 Processes 3
4.2.2 Process dimension 4
4.2.3 Capability dimension 4
4.3 Assessment indicators 5
4.3.1 Process Capability Indicators 7
4.3.2 Process Performance Indicators 8
4.4 Measuring process capability 8
5 The process dimension and process performance indicators (Level 1) **9**
5.1 General 9
5.2 COM.01 Communication management 11
5.3 COM.02 Documentation management 12
5.4 COM.03 Human resource management 13
5.5 COM.04 Improvement 14
5.6 COM.05 Internal audit 16
5.7 COM.06 Management review 16
5.8 COM.07 Non-conformity management 17
5.9 COM.08 Operational planning 19
5.10 COM.09 Operational implementation and control 22
5.11 COM.10 Performance evaluation 24
5.12 COM.11 Risk management 25
5.13 ORG.01 Asset management 27
5.14 ORG.02 Measurement resource management 27
5.15 ORG.03 Supplier management 28
5.16 TEC.01 Configuration management 29
5.17 TEC.02 Process changes 30
5.18 TEC.03 Product/service changes 31
5.19 TEC.04 Product/service design 31
5.20 TEC.05 Product/service planning 32
5.21 TEC.06 Product/service quarantine 33
5.22 TEC.07 Product/service requirements 34
5.23 TEC.08 Product/service review 35
5.24 TEC.09 Product/service supply 36
5.25 TEC.10 Product/service validation 37
5.26 TEC.11 Product/service verification 37
5.27 TOP.01 Leadership 38
6 Process capability indicators **40**
6.1 General 40
6.2 Process capability levels and process attributes 41
6.2.1 General 41
6.2.2 Process capability Level 0: Incomplete process 41
6.2.3 Process capability Level 1: Performed process 41
6.2.4 Process capability Level 2: Managed process 42
6.2.5 Process capability Level 3: Established process 46
6.2.6 Process capability Level 4: Predictable process 51

Documents
Document Sharing Hub

© ISO/IEC 2017 – All rights reserved

Full document details: PD ISO/IEC TS 33073:2017

6.2.7 Process capability Level 5: Innovating process 55
6.3 Related processes for process attributes 58
Annex A (informative) **Conformity of the process assessment model** **60**
Annex B (informative) **Input and output characteristics** **65**
Annex C (informative) **Association between base practices and ISO 9001 requirements** **105**
Bibliography **296**

© ISO/IEC 2017 – All rights reserved
Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

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 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 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*.

© ISO/IEC 2017 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

Introduction

This document provides a Quality Management Process Assessment Model (PAM) for use in performing a conformant assessment of process capability in accordance with the requirements of ISO/IEC 33002. It is structured in accordance with the requirements of ISO/IEC 33004 to reflect processes that enable implementation of ISO 9001. The scale for assessing the extent of achievement of process capability is based on ISO/IEC 33020.

The publication of the revised edition of ISO 9001:2015 has rendered the publication of this document as both timely and appropriate.

An integral part of conducting an assessment is to use a PAM that is constructed for that purpose. A PAM is related to a Process Reference Model (PRM) and is conformant with ISO/IEC 33004. ISO/IEC 33002 identifies the minimum requirements for performing an assessment in order to ensure consistency and repeatability of the ratings. ISO/IEC 33002 addresses the assessment of process and the application of process assessment for improvement and capability determination. Results of conformant process assessments may be compared when the scopes of the assessments are considered to be similar.

The requirements for process assessment defined in ISO/IEC 33002 form a structure which:

a) facilitates self-assessment;

b) provides a basis for use in process improvement and capability determination;

c) takes into account the context in which the assessed process is implemented;

d) produces a process rating;

e) addresses the ability of the process to achieve its purpose;

f) is applicable across all application domains and sizes of organization;

g) may provide an objective benchmark between organizations.

The relationship between ISO/IEC TR 24774, ISO 9001, ISO/IEC 33002, ISO/IEC 33004, ISO/IEC 33020, and this document is shown in Figure 1.

© ISO/IEC 2017 – All rights reserved
Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

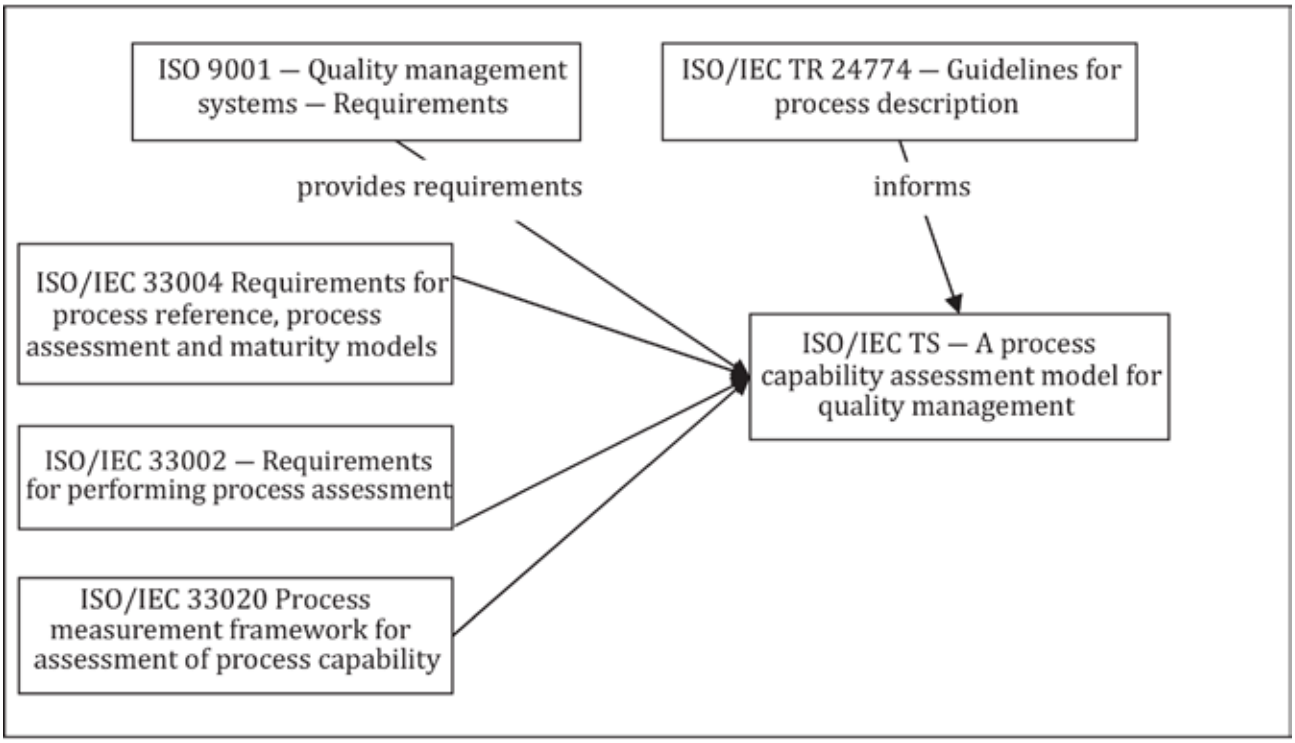

Figure 1 — Relationships between relevant standards

Any organization may use processes with additional elements in order to suit it to the environment and circumstances. This PAM contains a set of indicators to be considered when interpreting the intent of its PRM. It provides greater detail to indicate process performance and capability. The indicators may also be used when implementing a process improvement program or to help evaluate and select an assessment model, method, methodology or tools.

As an exemplar, this PAM embodies the core characteristics that could be expected of any PAM consistent with ISO/IEC 33004. Nevertheless, any other PAMs meeting the requirements of ISO/IEC 33004 may be used in a conformant assessment.

This document has a similar structure to ISO/IEC 15504-5 and ISO/IEC 15504-6. It may be used in conjunction with these process assessment models to support joint assessment of quality management processes and system/software life cycle processes.

Within this document:

— Clause 4 provides a detailed description of the structure and key components of a PAM, which includes two dimensions: a process dimension and a capability dimension. Assessment indicators are introduced in this clause.

— Clause 5 addresses the process dimension. The processes are described in the PAM in terms of purpose and outcomes. The PAM includes a set of process performance indicators called base practices for each process. The PAM also defines a second set of indicators of process performance by associating inputs and outputs with each process. Clause 5 is also linked directly to Annex B, which defines the inputs/outputs characteristics.

— Clause 6 addresses the capability dimension. It duplicates the definitions of the capability levels and process attributes from ISO/IEC 33020 and expands each of the nine attributes through the inclusion of a set of generic practices. These generic practices belong to a set of indicators of process capability, in association with generic resource indicators, and generic inputs/outputs indicators. Annex B is also linked directly to Clause 6 as it defines the inputs/outputs characteristics.

© ISO/IEC 2017 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

— Annex A provides a statement of conformance of the PAM to the requirements defined in ISO/IEC 33004.

— Annex B provides selected characteristics for typical inputs/outputs to assist the assessor in evaluating the capability level of processes.

— Annex C contains three tables. Table C.1 identifies the base practices linked to requirements; Table C.2 identifies the requirements linked to base practices; and lastly, Table C.3 identifies the base practices not linked to requirements.

— Bibliography contains a list of informative references.

© ISO/IEC 2017 – All rights reserved
Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

TECHNICAL SPECIFICATION **ISO/IEC TS 33073:2017(E)**

Information technology — Process assessment — Process capability assessment model for quality management

1 Scope

This document:

— defines an integrated PRM and PAM that meets the requirements of ISO/IEC 33004 and that supports the performance of an assessment by providing indicators for guidance on the interpretation of the process purposes and outcomes and the process attributes as defined in ISO/IEC 33020;

— provides guidance, by example, on the definition, selection and use of assessment indicators.

A PAM comprises a set of indicators of process performance and process capability. The indicators are used as a basis for collecting the objective evidence that enables an assessor to assign ratings. The set of indicators included in this document is not intended to be an all-inclusive set nor is it intended to be applicable in its entirety.

The PAM in this document is directed at assessment sponsors and competent assessors who wish to select a model and associated documented process method for assessment (for either capability determination or process improvement). Additionally, it can be of use to developers of assessment models in the construction of their own model, by providing examples of good service management practices. It can be used by:

a) service providers to assess and improve a Quality Management System (QMS);

b) service providers to demonstrate their capability for the design, development, transition and delivery of services that fulfil Quality Management requirements.

Any PAM meeting the requirements defined in ISO/IEC 33004 concerning models for process assessment may be used for assessment. Different models and methods can be needed to address differing business needs. The assessment model in this document is provided as an assessment model meeting all the requirements expressed in ISO/IEC 33004.

NOTE **Copyright release for the PAM:** Users of this document can 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.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

No terms and definitions are listed in this document.

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

© ISO/IEC 2017 – All rights reserved

Documents
Document Sharing Hub

Full document details: PD ISO/IEC TS 33073:2017

4 Overview of the Process Assessment Model (PAM)

4.1 General

This document provides a PAM that includes examples of assessment indicators.

The PRM defined in this document, associated with the process attributes defined in ISO/IEC 33020, establish a PAM used as a common basis for performing assessments of Quality Management system process capability, allowing for the reporting of results using a common rating scale.

This PAM is a two-dimensional model of the process quality characteristic of process capability. In one dimension, the process dimension, the processes are defined. In the other dimension, the capability dimension, a set of process attributes grouped into capability levels is defined. The process attributes provide the measurable features of the process quality characteristic of process capability.

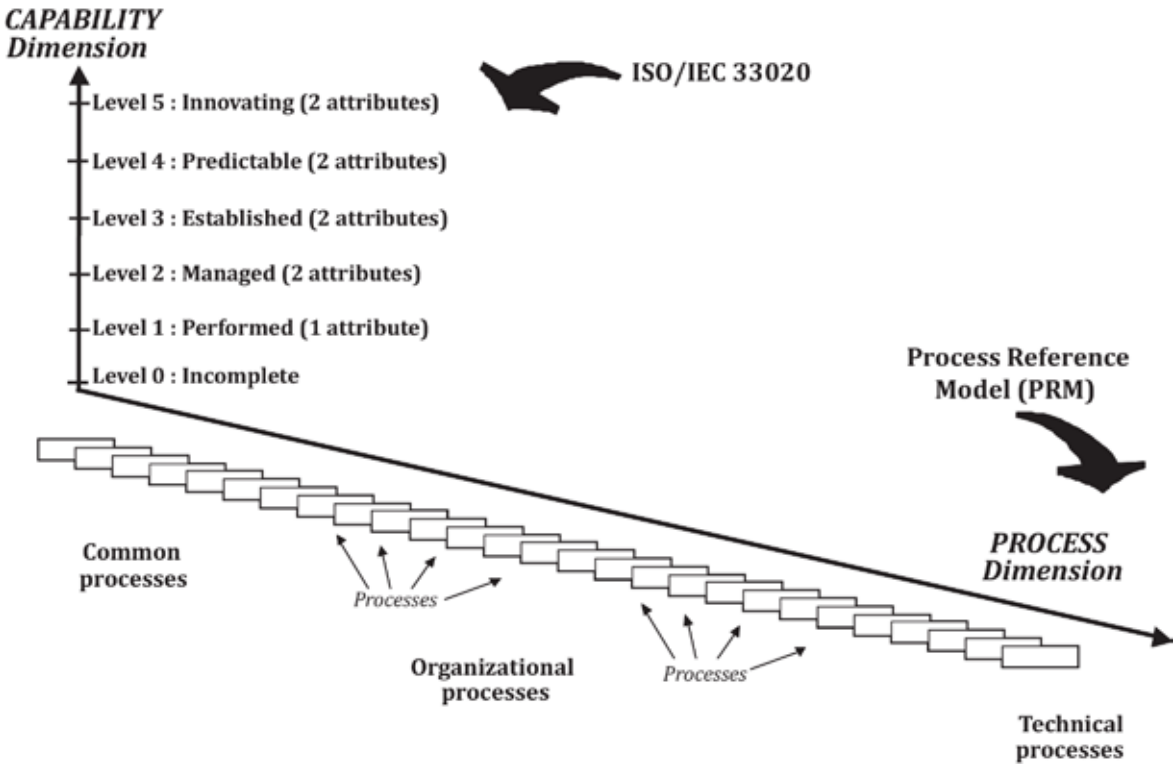

Figure 2 — Relationship between the Process Assessment Model and its inputs

Figure 2 shows the relationship between the general structure of the PAM and ISO/IEC 33020.

A PRM conformant with the requirements defined in ISO/IEC 33004 and a capability dimension defined in ISO/IEC 33020 cannot be used alone as the basis for conducting reliable and consistent assessments of process capability since the level of detail provided is not sufficient. The descriptions of process purpose and outcomes in a PRM, and the process attribute definitions in ISO/IEC 33020, need to be supported with a comprehensive set of indicators of process performance and process capability that are used for assessment performance.

The PAM defined in this document is conformant with the ISO/IEC 33004 requirements for a PAM and can be used as the basis for conducting an assessment of Quality Management process capability.

In order to meet the PAM requirements of ISO/IEC 33004, a documented process supporting other requirements of ISO/IEC 33002 is also required. This need may be met, for example, by the adoption of a supporting method for conducting assessments.

© ISO/IEC 2017 – All rights reserved
Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

4.2 Structure of the Process Assessment Model

This subclause describes the detailed structure of the PAM and its key components.

This PAM expands upon the PRM by including a defined set of assessment indicators. Assessment indicators comprise indicators of process performance and process capability and are defined to support an assessor's judgment of the performance and capability of an implemented process.

Clause 5, together with its associated Annex B, describes the components of the process dimension, and Clause 6 describes the components of the capability dimension. Annex A provides a statement of conformance of the PAM to the requirements defined in ISO/IEC 33004.

ISO/IEC 33004 requires that processes included in a PRM satisfy the following.

"*The fundamental elements of a process reference model are the descriptions of the processes within the scope of the model.*

The process descriptions in the process reference model incorporate a statement of the purpose of the process which describes at a high level the overall objectives of performing the process, together with the set of outcomes which demonstrate successful achievement of the process purpose.

A process description shall meet the following requirements:

a) *a process shall be described in terms of its purpose and process outcomes;*

b) *the set of process outcomes shall be necessary and sufficient to achieve the purpose of the process;*

c) *process descriptions shall not contain or imply aspects of the process quality characteristic beyond the basic level of any relevant process measurement framework conformant with ISO/IEC 33003."*

4.2.1 Processes

Figure 3 shows the processes included in the process dimension of the PAM for quality management.

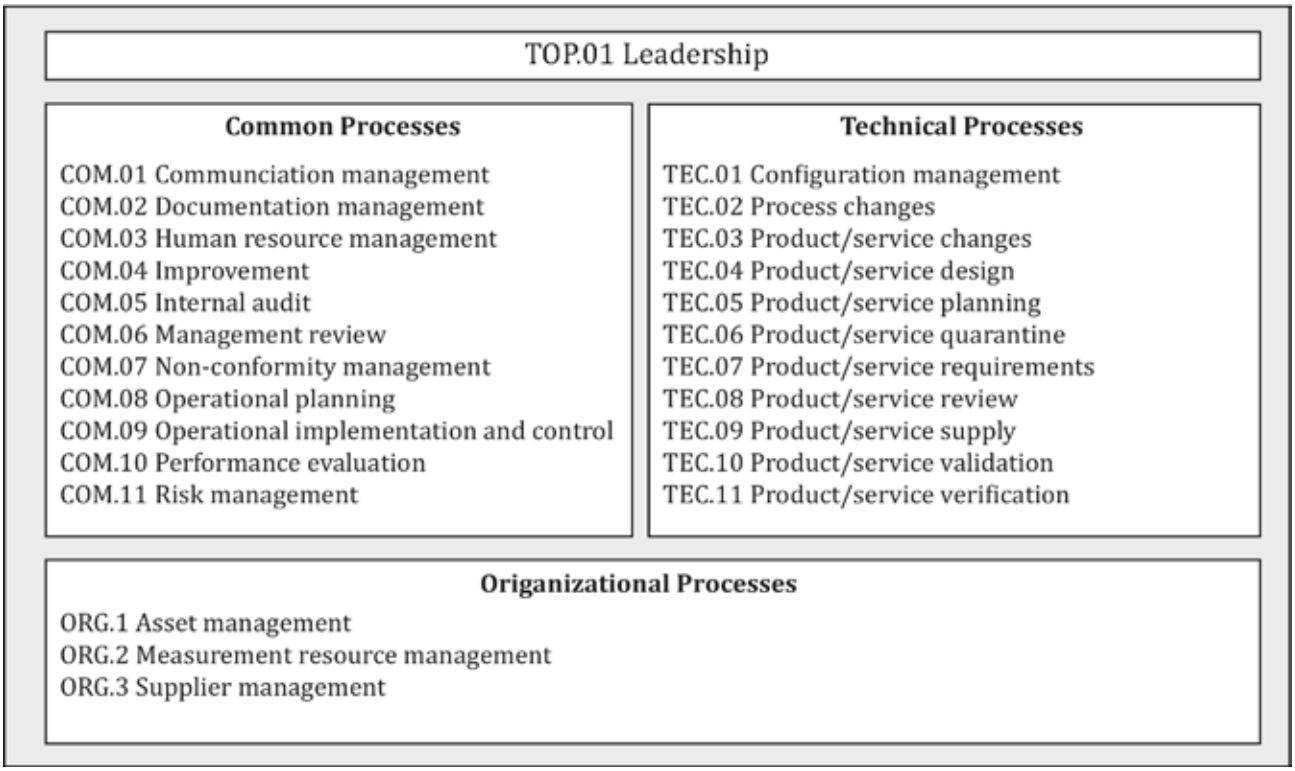

Figure 3 — Processes in the Process Assessment Model

© ISO/IEC 2017 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

4.2.2 Process dimension

The process dimension of the PAM includes all processes and shown in Figure 3. Each process in the PAM 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 outcomes is associated with each of the process purpose statements, as a list of expected positive results of the performance of the processes.

Satisfying the purpose statements of a process represents the first step in building a level 1 process capability where the expected outcomes are observable. The processes are described in Clause 5.

4.2.3 Capability dimension

For the capability dimension, the process capability levels and process attributes are identical to those defined in ISO/IEC 33020.

Evolving process capability is expressed in the PAM in terms of process attributes grouped into capability levels. Process attributes are features of a process that can be evaluated on a scale of achievement, providing a measure of the capability of the process. They are applicable to all processes. Each process attribute describes a facet of the overall capability of managing and improving the effectiveness of a process in achieving its purpose and contributing to the business goals of the organization.

A capability level is a set of process attribute(s) that work together to provide a major enhancement in the capability to perform a process. The levels constitute a rational way of progressing through improvement of the capability of any process and are defined in ISO/IEC 33020.

There are six capability levels, incorporating nine process attributes.

— **Level 0: Incomplete process**

  The process is not implemented or fails to achieve its process purpose.

  At this level, there is little or no evidence of any systematic achievement of the process purpose.

— **Level 1: Performed process**

  The implemented process achieves its process purpose.

— **Level 2: Managed process**

  The previously described Performed process is now implemented in a managed fashion (planned, monitored and adjusted) and its work products are appropriately established, controlled and maintained.

— **Level 3: Established process**

  The previously described Managed process is now implemented using a defined process that is capable of achieving its process outcomes.

— **Level 4: Predictable process**

  The previously described Established process now operates predictably within defined limits to achieve its process outcomes. Quantitative management needs are identified, measurement data are collected and analysed to identify assignable causes of variation. Corrective action is taken to address assignable causes of variation.

— **Level 5: Innovating process**

  The previously described Predictable process is now continually improved to respond to change aligned with organizational goals.

© ISO/IEC 2017 – All rights reserved
Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

Within the PAM, the measure of capability is based upon the nine process attributes (PA) defined in ISO/IEC 33020. Process attributes are used to determine whether a process has reached a given capability. Each attribute measures a particular aspect of the process capability.

At each level, there is no ordering between the process attributes; each attribute addresses a specific aspect of the capability level. The list of process attributes is shown in Table 1.

Table 1 — Capability levels and process attributes

Process Attribute ID	Capability Levels and Process Attributes
	Level 0: Incomplete process
	Level 1: Performed process
PA 1.1	Process performance
	Level 2: Managed process
PA 2.1	Performance management
PA 2.2	Work Products management
	Level 3: Established process
PA 3.1	Process definition
PA 3.2	Process deployment
	Level 4: Predictable process
PA 4.1	Quantitative analysis
PA 4.2	Quantitative control
	Level 5: Innovating process
PA 5.1	Process innovation
PA 5.2	Process innovation implementation

The process attributes are evaluated on a four point ordinal scale of achievement, as defined in ISO/IEC 33020. They provide insight into the specific aspects of process capability required to support process improvement and capability determination.

4.3 Assessment indicators

The PAM is based on the principle that the capability of a process can be assessed by demonstrating the achievement of process attributes on the basis of evidence related to assessment indicators.

© ISO/IEC 2017 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

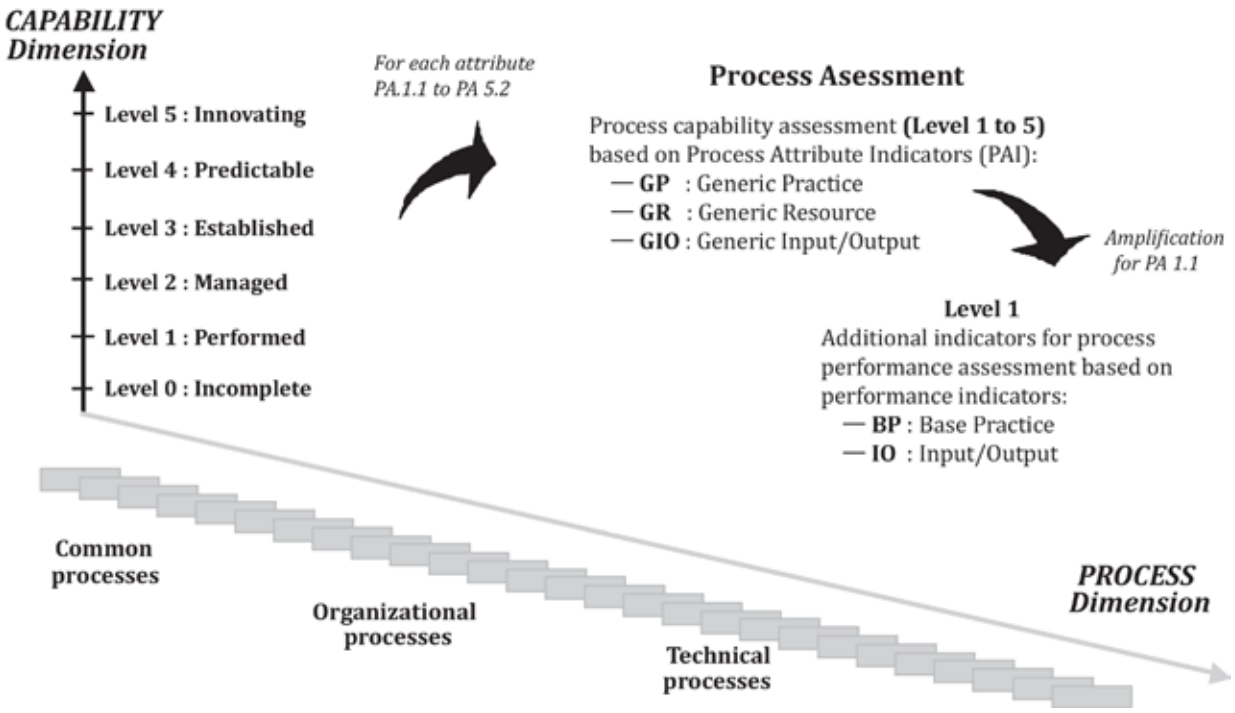

Figure 4 — Assessment indicators

There are two types of assessment indicators: process capability indicators, which apply to capability levels 1 to 5 and process performance indicators, which apply exclusively to capability level 1. These indicators are defined in 4.3.2.

The process attributes in the capability dimension have a set of process capability indicators that provide an indication of the extent of achievement of the attribute in the instantiated process. These indicators concern significant activities, resources or results associated with the achievement of the attribute purpose by a process.

The process capability indicators are:

— Generic Practice (GP);

— Generic Resource (GR);

— Generic Input/Output (GIO).

As additional indicators for supporting the assessment of a process at Level 1, each process in the process dimension has a set of process performance indicators which is used to measure the degree of achievement of the process performance attribute for the process assessed.

The process performance indicators are:

— Base Practice (BP);

— Input/output (IO).

The performance of Base Practices (BPs) provides an indication of the extent of achievement of the process purpose and process outcomes. Input/Outputs (IOs) are either used or produced (or both), when performing the process.

The process performance and process capability indicators defined in the PAM represent types of objective evidence that might be found in an instantiation of a process and therefore could be used to judge achievement of capability.

© ISO/IEC 2017 – All rights reserved
Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

Figure 4 shows how the assessment indicators are related to process performance and process capability.

4.3.1 Process Capability Indicators

The three types of process capability indicators related to levels 1 to 5 are identified in Figure 5. They are intended to be applicable to all processes.

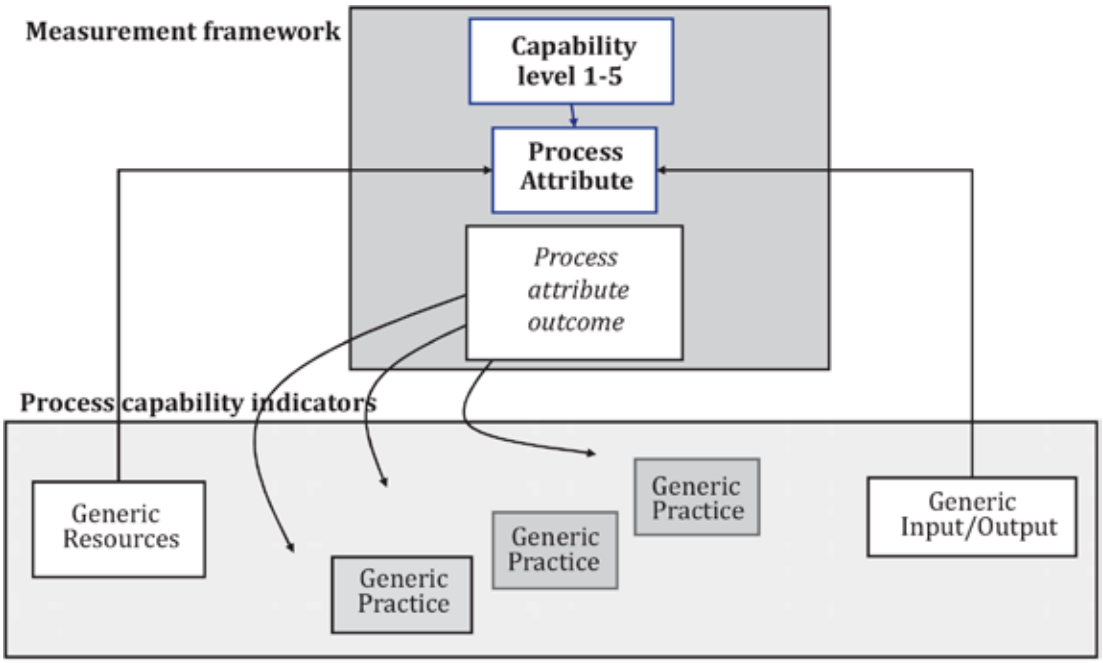

Figure 5 — Process capability indicators

All the process capability indicators relate to the process attributes defined in the capability dimension of the PAM. They represent the type of evidence that would support judgments of the extent to which the attributes are achieved. Evidence of their effective performance or existence supports the judgment of the degree of achievement of the attribute. The generic practices are the principal indicators of process capability.

The **Generic Practice (GP)** indicators are indicators of activities of a generic type and provide guidance on the implementation of the attribute's characteristics. They support the achievement of the process attribute and many of them concern management practices, i.e. practices that are established to support the process performance as it is characterized at level 1.

During the evaluation of process capability, the primary focus is on the performance of the generic practices. In general, performance of all generic practices is expected for full achievement of the process attribute.

The **Generic Resource (GR)** indicators are associated resources that may be used when performing the process in order to achieve the attribute. These resources may include human resources, tools, methods and infrastructure. The availability of a resource indicates the potential to fulfil the purpose of a specific attribute.

The assessor should interpret the generic resources according to the process assessed, e.g. for PA2.1 resources (with identified objectives, responsibilities and authorities), an assessor would look for roles (with identified objectives, responsibilities and authorities) in primary and supporting processes, but for organizational processes, would look for governance structures (e.g. mandated committees, positions) with identified objectives, responsibilities and authorities.

The **Generic Input/Output (GIO)** indicators are sets of characteristics that would be expected to be evident in inputs/outputs of generic types as a result of achievement of an attribute. The

© ISO/IEC 2017 – All rights reserved

AVA Documents Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

generic inputs/outputs form the basis for the classification of the inputs/outputs defined as process performance indicators; they represent basic types of inputs/outputs from all types of processes.

These three types of indicators help to establish objective evidence of the extent of achievement of the specified process attribute.

Due to the fact that Level 1 capability of a process is only characterized by the measure of the extent to which the process purpose is achieved, the process performance attribute (PA.1.1) has a single generic practice indicator (GP.1.1.1). In order to support the assessment of PA.1.1 and to amplify the process performance achievement analysis, additional process performance indicators are defined in the PAM.

4.3.2 Process Performance Indicators

There are two types of process performance indicators: **Base Practice (BP)** indicators and **Input/Output (IO)** indicators. Process performance indicators relate to individual processes defined in the process dimension of the PAM and are chosen to explicitly address the achievement of the defined process outcomes.

Evidence of performance of the base practices, and the presence of inputs/outputs with their expected characteristics, provide objective evidence of the achievement of the process outcomes.

A base practice is an activity that addresses the purpose of a particular process. Consistently performing the base practices associated with a process will help the consistent achievement of its purpose. A coherent set of base practices is associated with each process in the process dimension. The base practices are described at an abstract level, identifying "what" should be done without specifying "how". Implementing the base practices of a process should achieve the basic outcomes that reflect the process purpose. Base practices represent only the first step in building process capability, but the base practices represent the unique, functional activities of the process, even if that performance is not systematic.

In this particular PAM, the base practices have been used as a vehicle to link the outcomes of each process in the PRM with the requirements defined for that process in ISO 9001. This has been achieved using the following strategy.

— Singular requirements from ISO 9001 have been identified and assigned a unique identifier (process number plus sequential numbering within the subclause).

— Each process outcome has been linked to a single base practice.

This approach provides insight on how the singular requirements from ISO 9001 contribute to the achievement of the process purpose and outcomes. The performance of a process requires inputs and produces outputs that are identifiable and usable in achieving the purpose of the process. In this assessment model, each input/output has a defined set of example characteristics that may be used when reviewing the input/output to assess the effective performance of a process. Input/output characteristics may be used to identify the corresponding input/output produced/used by the assessed organization.

Clause 5 contains a complete description of the processes, including the base practices and the associated inputs and outputs.

Annex B contains a list of generic inputs/outputs together with their characteristics.

4.4 Measuring process capability

The process performance and process capability indicators in this model give examples of evidence that an assessor might obtain or observe in the performance of an assessment. The evidence obtained in the assessment, through observation of the implemented process, can be mapped onto the set of indicators to enable correlation between the implemented process and the processes defined in this assessment model. These indicators provide guidance for assessors in accumulating the necessary objective evidence to support judgments of capability. They are not mandatory.

© ISO/IEC 2017 – All rights reserved
Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

An indicator is defined as an objective characteristic of a practice or input/output that supports performing a conformant assessment in accordance with the requirements of ISO/IEC 33004. The assessment indicators and their relationship to process performance and process capability are shown in Figure 6.

Observable (objective) evidence collected during an assessment is used to confirm the indicators (e.g. practices were performed). All such evidence comes either from the examination of inputs/outputs of the processes assessed or from statements made by the performers and managers of the processes.

The existence of base practices, inputs/outputs, and input/output characteristics, provide evidence of the performance of the processes associated with them. Similarly, the existence of process capability indicators provides evidence of process capability.

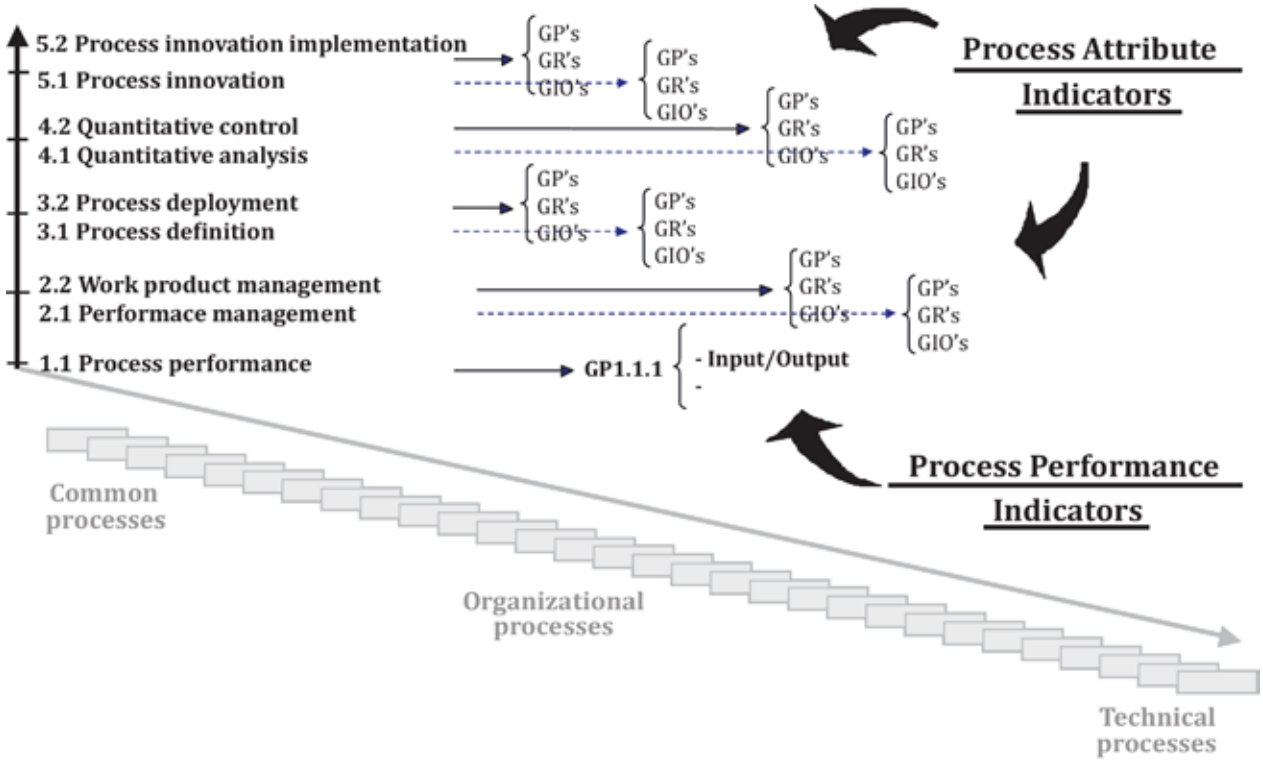

Figure 6 — Relationship between assessment indicators and process capability

The evidence obtained should be recorded in a form that clearly relates to an associated indicator, so that the support for the assessor's judgment can be readily confirmed or verified as required by ISO/IEC 33002.

The output from a process assessment is a set of process profiles, one for each process within the scope of the assessment. Each process profile consists of a set of the process attribute ratings for an assessed process. Each attribute rating represents a judgment by the assessor of the extent to which the attribute is achieved. To improve the reliability and repeatability of the assessment, the judgments of the assessor are based on a coherent set of recorded objective evidences.

5 The process dimension and process performance indicators (Level 1)

5.1 General

This clause defines the processes and the process performance indicators, also known as the process dimension, of the PAM. The processes in the process dimension can be directly mapped to the processes defined in the PRM.

© ISO/IEC 2017 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

The processes are classified into Process Groups which are shown in Figure 3. The process purposes, outcomes, the practices, the inputs and outputs of processes are included in this clause.

The individual processes are described in terms of process name, process purpose, and process outcomes:

a) name: a short noun phrase that summarizes the scope of the process, identifying the principle concern of the process, and distinguishes it from other processes within the scope of the PRM;

b) purpose: describes at a high level the overall objectives of performing the process;

c) outcomes: observable result of the successful achievement of the process purpose. Outcomes are measurable, tangible, technical or business results that are achieved by a process. Outcomes are observable and assessable.

In addition, the process dimension of the PAM provides information in the form of:

a) a set of base practices for the process needed to accomplish the process outcomes; a single base practice is explicitly associated with a process outcome;

b) a number of inputs/outputs associated with each process and their relationship to one or more of its outcomes by numbers in square brackets (i.e. [n]);

c) characteristics associated with each input/output.

The input/output identifiers and characteristics are contained in Annex B.

The base practices and the inputs/outputs constitute the set of indicators of process performance. The associated inputs/outputs listed in this clause may be used when reviewing potential inputs and outputs of an organization's process implementation. They provide objective guidance for potential inputs and outputs to look for and objective evidence supporting the assessment of a particular process. 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 explicitly considered when using this information. This list should not be considered as a checklist of what each organization must have but rather as an example and starting point for considering whether, given the context, the inputs/outputs are necessary and contributing to the intended purpose of the process.

NOTE Some outcomes are not linked to specific requirements of ISO 9001. These additional outcomes have been included in order to present a complete process so that the process purpose can be achieved. The complete list of affected base practices is shown in Table C.2.

© ISO/IEC 2017 – All rights reserved
Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

5.2 COM.01 Communication management

Process ID	COM.01
Name	Communication management
Purpose	The purpose of communication management is to produce timely and accurate information products to support effective communication and decision making.
Outcomes	As a result of successful implementation of this process: a) information content is defined in terms of identified communication requirements; b) parties to communicate with are identified; c) the party responsible for the communication is identified; d) events that require communication actions are identified; e) the channel for the communication is selected; f) information products are communicated to relevant interested parties.
Base Practices	COM.01.BP.1 **Define information content.** Define information content in terms of identified communication needs and requirements. [Outcome 1] COM.01.BP.2 **Identify parties to communicate to.** Identify parties to communicate with. [Outcome 2] COM.01.BP.3 **Identify party responsible for communication.** Identify the party responsible for the communication. [Outcome 3] COM.01.BP.4 **Identify communication events.** Identify the events that require communication actions. [Outcome 4] COM.01.BP.5 **Select communication channel.** Select the channel for the communication. [Outcome 5] COM.01.BP.6 **Communicate information products.** Communicate information products to relevant interested parties. [Outcome 6]
Inputs	
12-02 Communication requirements [Outcome 6]	
Outputs	
08-03 Audit result communication record [Outcome 6] 12-02 Communication requirements [Outcomes 1,2,3,4,5] 08-13 Improvement communication record [Outcome 6] 08-25 Nonconforming product customer communication record [Outcome 6] 08-44 Product/service requirements communication record [Outcome 6] 08-53 QMS Communication records [Outcome 6]	

© ISO/IEC 2017 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

5.3 COM.02 Documentation management

Process ID	COM.02
Name	Documentation management
Purpose	The purpose of document management is to provide relevant, timely, complete, valid documented information to designated parties.
Outcomes	As a result of successful implementation of this process: a) documented information to be documented is identified; b) the forms of documented information representation are defined; c) the documented information content status is known; d) documented information is current, complete and valid; e) documented information is released according to defined criteria; f) documented information is available to relevant interested parties; g) documented information is archived, or disposed of, as required.
Base Practices	COM.02.BP.1 **Identify documented information to be managed.** Identify documented information of internal and external origin necessary for the operation of the quality management system. [Outcome 1] COM.02.BP.2 **Define the forms of documented information representation.** Identify the forms of information to be stored in the repository. For example, this may include documents, records, audio content, video content, image content. [Outcome 2] COM.02.BP.3 **Determine the documented information content status.** The status of the documented information content refers to the timeliness of the information content. This includes the control of changes, for example, by using version control techniques. [Outcome 3] COM.02.BP.4 **Determine whether the documented information is current, complete and valid.** The documented information contained in the repository is adequately protected (e.g. from loss of confidentiality, improper use, or loss of integrity). [Outcome 4] COM.02.BP.5 **Release documented information according to defined criteria.** The documented information release status refers to those situations typically where authorization is needed, such as in situations where a) agreements are in force, and b) policies and procedures are approved by management and their use in the organization is thereby obligatory. [Outcome 5] COM.02.BP.6 **Make documented information available to relevant interested parties.** Manage the distribution, access, retrieval and use of documented information towards interested parties. [Outcome 6] COM.02.BP.7 **Archive, or dispose of documented information, as required.** Manage documented information, including records, through its lifecycle by addressing the following activities: a) storage and preservation, including preservation of legibility; b) retention and disposition. Records should be protected in accordance with statutory, regulatory, contractual and business requirements. [Outcome 7]
Inputs	
03-08 Management system strategy: documentation [Outcomes 1,2]	

Outputs

© ISO/IEC 2017 – All rights reserved
Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

08-11 Corrective action record [Outcome 1]
11-01 Corrective action request [Outcome 1]
08-12 Customer asset communication record [Outcome 1]
12-03 Documentation management requirements [Outcome 2]
08-17 Information item approval record [Outcome 5]
03-02 Information item identification [Outcome 2]
12-05 Information management requirements [Outcomes 4,6,7]
08-20 Management review record [Outcome 1]
03-04 Management system (MS) scope [Outcomes 1,3]
03-12 Management system strategy: knowledge [Outcomes 4,6]
03-14 Management system strategy: measurement [Outcome 1]
03-15 Management system strategy: outsourcing [Outcome 1]
08-21 Measurement resources effectiveness review result [Outcome 1]
08-22 MS Implementation log [Outcome 1]
02-5 MS Measurement information collection log [Outcome 1]
08-29 Non-conformity disposition record [Outcome 1]
11-04 Nonconforming product corrective action request [Outcome 1]
08-25 Nonconforming product customer communication record [Outcome 1]
08-27 Nonconforming product quarantine release authorization [Outcome 1]
08-31 Personnel competency records [Outcome 1]
08-32 Process change approval record [Outcome 1]
02-7 Process change implementation log [Outcome 1]
08-34 Process change request review record [Outcome 1]
04-6 Product/service process lifecycle model [Outcome 1]
12-15 Product/service characteristics [Outcome 1]
08-35 Product/service design change log [Outcome 1]
08-36 Product/service release approval record [Outcome 5]
12-18 Product/service requirements [Outcome 1]
11-10 Product/service requirements change request [Outcome 4]
08-45 Product/service requirements review record [Outcome 1]
08-46 Product/service requirements status record [Outcome 3]
03-27 Product/service taxonomy [Outcome 1]
08-49 Product/service validation record [Outcome 1]
03-34 Quality objectives [Outcomes 3,4]
05-2 Quality policy [Outcomes 1,4,6]
09-10 Risk analysis report [Outcome 1]
08-55 Risk assessment review record [Outcome 1]

5.4 COM.03 Human resource management

Process ID	COM.03

© ISO/IEC 2017 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

Name	Human resource management
Purpose	The purpose of human resource management is to provide the organization with necessary competent human resources and to improve their competencies, in alignment with business needs.
Outcomes	As a result of successful implementation of this process: a) the competencies required by the organization to produce products and services are identified; b) identified competency gaps are filled through training or recruitment; c) understanding of roles and activities in achieving organsational objectives in product and service provision is demonstrated by each individual.
Base Practices	COM.03.BP.1 **Identify organizational competencies.** Identify the competencies required by the organization. [Outcome 1] COM.03.BP.2 **Fill competency gaps.** Fill identified competency gaps through training or recruitment. [Outcome 2] COM.03.BP.3 **Demonstrate awareness of understanding of role.** Each individual demonstrates their understanding of their role and activities in achieving organizational objectives. [Outcome 3]
Inputs	
12-10 Organizational competence requirements [Outcome 2] 08-31 Personnel competency records [Outcome 2]	
Outputs	
12-10 Organizational competence requirements [Outcome 1] 08-61 Training effectiveness evaluation result [Outcome 3] 08-62 Training record [Outcomes 2,3]	

5.5 COM.04 Improvement

Process ID	COM.04
Name	Improvement
Purpose	The purpose of Improvement is to continually improve the management system, its processes, products and services.
Outcomes	As a result of successful implementation of this process: a) opportunities for improvement are identified; b) opportunities for improvement are evaluated against defined criteria; c) improvements are prioritized; d) improvements are implemented; e) the effectiveness of implemented improvements is evaluated.

© ISO/IEC 2017 – All rights reserved
Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

Base Practices	COM.04.BP.1 **Identify improvement opportunities.** These might arise from the following sources: a) the decisions and actions arising from the outputs of the management reviews; b) feedback arising from actions to meet customer requirements and assess customer satisfaction; c) actions arising from: 1) improving products and services to meet requirements as well as to address future needs and expectations; 2) correcting, preventing or reducing undesired effects; 3) improving the performance and effectiveness of the quality management system. [Outcome 1] COM.11.BP.6 **Identify opportunities.** One of the options for treating risk involve taking or increasing the risk in order to pursue an opportunity. [Outcome 1] COM.04.BP.2 **Evaluate improvement opportunities.** Evaluate opportunities for improvement against defined criteria. The results of analysis are used to evaluate the need for improvements to the quality management system, and to the business processes. [Outcome 2] COM.04.BP.3 **Prioritize improvements.** Prioritize the improvements to be made. [Outcome 3] COM.04.BP.4 **Implement improvements.** Implement the selected improvements. [Outcome 4] COM.04.BP.5 **Evaluate improvement effectiveness.** Evaluate the effectiveness of implemented improvements. [Outcome 5]
Inputs	
11-03 Improvement opportunity approval request [Outcome 5] 12-04 Improvement opportunity evaluation criteria [Outcomes 2,4] 08-14 Improvement opportunity evaluation result [Outcomes 3,4] 08-16 Improvement opportunity record [Outcomes 2,3] 05-1 Improvement policy [Outcome 2] 06-1 Improvement procedure [Outcomes 2,3] 03-01 Improvement target [Outcomes 4,5]	
Outputs	
04-4 Improvement implementation schedule [Outcome 4] 11-02 Improvement opportunity [Outcome 1] 11-03 Improvement opportunity approval request [Outcome 3] 09-02 Improvement opportunity evaluation report [Outcome 2] 08-14 Improvement opportunity evaluation result [Outcome 2] 08-15 Improvement opportunity implementation log [Outcome 5] 08-16 Improvement opportunity record [Outcome 1] 03-01 Improvement target [Outcome 3] 03-09 Management system strategy: Establish the management system [Outcome 1]	

© ISO/IEC 2017 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

5.6 COM.05 Internal audit

Process ID	COM.05
Name	Internal audit
Purpose	The purpose of internal audit is to independently determine conformity of the management system, products, services, and processes to the requirements, policies, plans and agreements, as appropriate.
Outcomes	As a result of successful implementation of this process: a) the scope and purpose of each audit is defined; b) the objectivity and impartiality of the conduct of audits and selection of auditors are assured; c) conformity of selected services, products and processes with requirements, plans and agreements is determined.
Base Practices	COM.05.BP.1 **Define the criteria and scope of each audit.** Define the audit criteria and the scope of each audit. [Outcome 1] COM.05.BP.2 **Select auditors .** Select auditors to ensure objectivity and the impartiality of the audit process. [Outcome 2] COM.05.BP.3 **Conduct audits.** Conduct audits according to the defined criteria ensuring objectivity and the impartiality of the audit process. [Outcome 3]
Inputs	
04-2 Audit plan [Outcomes 2,3] 08-05 Auditor list [Outcome 3]	
Outputs	
08-01 Audit (MS) log [Outcome 3] 04-2 Audit plan [Outcome 1] 08-04 Audit results [Outcome 3] 08-05 Auditor list [Outcome 2]	

5.7 COM.06 Management review

Process ID	COM.06
Name	Management review
Purpose	The purpose of management review is to assess the performance of the management system, to identify and make decisions regarding potential improvements.
Outcomes	As a result of successful implementation of this process: a) the objectives of the review are established; b) the status and performance of an activity or process are assessed in terms of the established objectives; c) risks, problems and opportunities for improvement are identified.

© ISO/IEC 2017 – All rights reserved
Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

Base Practices	COM.06.BP.1 **Identify the objectives for management system review.** Objectives for management review include: a) the status of actions from previous management reviews; b) changes in external and internal issues that are relevant to the quality management system including its strategic direction; c) information on the quality performance, including trends and indicators for: 1) nonconformities and corrective actions; 2) monitoring and measurement results; 3) audit results; 4) customer satisfaction; 5) issues concerning external providers and other relevant interested parties; 6) adequacy of resources required for maintaining an effective quality management system; 7) process performance and conformity of products and services; d) the effectiveness of actions taken to address risks and opportunities; e) new potential opportunities for continual improvement. [Outcome 1] COM.06.BP.2 **Assess status and performance of activities.** Top management conduct reviews of the organization's quality management system to ensure its continuing suitability, adequacy and effectiveness. [Outcome 2] COM.06.BP.3 **Identify risks, problems and opportunities for improvement.** Identify risks, problems, and opportunities related to improvement, and the need for changes to the quality management system. [Outcome 3]
Inputs	
03-03 Management review objectives [Outcome 2] 08-20 Management review record [Outcome 3]	
Outputs	
11-02 Improvement opportunity [Outcome 3] 08-19 Management review action log [Outcome 3] 03-03 Management review objectives [Outcome 1] 08-20 Management review record [Outcome 2]	

5.8 COM.07 Non-conformity management

Process ID	COM.07
Name	Non-conformity management
Purpose	The purpose of the non-conformity management process is to resolve non-conformities and to eliminate their causes when appropriate.

© ISO/IEC 2017 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

Outcomes	As a result of successful implementation of this process: a) non-conformities are identified; b) non-conformities are resolved and closed; c) the cause(s) of selected non-conformities is determined; d) the need for action to eliminate the causes of non-conformities is evaluated; e) a selected action proposal is implemented; f) the effectiveness of changes to eliminate the non-conformities is confirmed.
Base Practices	COM.07.BP.1 **Identify non-conformities.** Non-conformities are identified. These might arise during development and/or production of the product/service, or from post-production activities e.g. feedback from customers. [Outcome 1] COM.07.BP.2 **Resolve and close non-conformities.** Resolve and close non-conformities. When a nonconformity occurs, including any arising from complaints, the organization reacts to the nonconformity and, as applicable: take action to control and correct it; and deal with the consequences. [Outcome 2] COM.07.BP.3 **Determine cause of non-conformities.** Determine the cause of selected non-conformities. The organization evaluates the need for action to eliminate the cause(s) of the nonconformity, in order that it does not recur or occur elsewhere, by: reviewing and analysing the nonconformity; determining the causes of the nonconformity; determining if similar nonconformities exist, or could potentially occur. [Outcome 3] COM.07.BP.4 **Determine the need for action.** Determine the need for action to eliminate the causes of non-conformities. Corrective actions are appropriate to the effects of the nonconformities encountered. [Outcome 4] COM.07.BP.5 **Implement selected action proposals.** Implement a selected action proposal. The organization implements any action needed. If necessary, changes are made to the quality management system. [Outcome 5] COM.07.BP.6 **Confirm change effectiveness.** Confirm the effectiveness of changes to eliminate the non-conformities. The organization reviews the effectiveness of any corrective action taken. [Outcome 6]
Inputs	
08-02 Audit corrective action record [Outcome 2] 08-08 Corrective action cause analysis record [Outcome 4] 08-11 Corrective action record [Outcome 5] 08-29 Non-conformity disposition record [Outcome 3] 08-30 Non-conformity record [Outcome 2]	
Outputs	
08-02 Audit corrective action record [Outcome 1] 08-07 Correction action log [Outcome 5] 08-08 Corrective action cause analysis record [Outcome 3] 08-09 Corrective action change proposal approval record [Outcome 5] 08-10 Corrective action change proposal verification record [Outcome 6] 08-11 Corrective action record [Outcome 4] 08-29 Non-conformity disposition record [Outcome 2] 08-30 Non-conformity record [Outcome 1]	

© ISO/IEC 2017 – All rights reserved
Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

5.9 COM.08 Operational planning

Process ID	COM.08
Name	Operational planning
Purpose	The purpose of operational planning is to define the characteristics of all operational and organizational processes, and to plan their execution.
Outcomes	As a result of successful implementation of this process: a) process requirements are identified; b) process input and output products are determined; c) the set of activities that transform the inputs into outputs is determined; d) the sequence and interaction of the process with other processes is determined; e) the required competencies and roles for performing the process are identified; f) the required resources for performing the process are identified; g) methods for monitoring the effectiveness and suitability of the process are determined; h) plans for the deployment of the process are developed.
Base Practices	COM.08.BP.1 **Identify process requirements.** Identify process requirements. These might arise from requirements associated with the quality management system, from realizing the quality objectives, the operational and/or product/service requirements. [Outcome 1] COM.08.BP.2 **Determine process input and output products.** Determine process input and output products expected from these processes. [Outcome 2] COM.08.BP.3 **Determine the set of activities that transform the inputs into outputs.** Determine the set of activities that transform the inputs into outputs. Controlled conditions include, as applicable, the availability and use of suitable monitoring and measuring resources. [Outcome 3] COM.08.BP.4 **Determine the sequence and interaction of the process with other processes.** Determine the sequence and interaction of the process with other processes by establishing criteria for the acceptance of products and services, the need for validation, and periodic revalidation, of the ability to achieve planned results of the processes for production and service provision, where the resulting output cannot be verified by subsequent monitoring or measurement, the implementation of actions to prevent human error, and the implementation of release, delivery and post-delivery activities. [Outcome 4]

© ISO/IEC 2017 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

	COM.08.BP.5 **Identify the required competencies and roles for performing the process.** Identify the required competencies and roles for performing the process. These include: a) ensuring that the quality management system conforms to the management system requirements; b) ensuring that the processes are delivering their intended outputs; c) reporting on the performance of the quality management system and on opportunities for improvement, in particular to top management; d) ensuring the promotion of customer focus throughout the organization; e) ensuring that the integrity of the quality management system is maintained when changes to the quality management system are planned and implemented; f) who will be responsible for meeting quality system objectives; g) the appointment of competent persons, including any required qualification. [Outcome 5] COM.08.BP.6 **Identify the required resources for performing the process.** Determine what resources will be required by the quality management system to achieve its quality objectives. This includes determining: a) the resources needed for these processes; b) the capabilities of, and constraints on, existing internal resources; c) what needs to be obtained from external providers; d) the resources needed to achieve conformity to the product and service requirements; e) the use of suitable infrastructure and environment for the operation of processes. [Outcome 6] COM.08.BP.7 **Determine the methods for monitoring the effectiveness and suitability of the process.** Determine the methods for monitoring the effectiveness and suitability of the process. [Outcome 7] COM.08.BP.8 **Plan the deployment of the process.** Plan that the processes will be deployed in order to achieve the quality objectives. Planning includes, but is not limited to: a) the nature, duration and complexity of the design and development activities; b) the required process stages, including applicable design and development reviews; c) the required design and development verification and validation activities; d) the responsibilities and authorities involved in the design and development process; e) the internal and external resource needs for the design and development of products and services; f) the need to control interfaces between persons involved in the design and development process; g) the need for involvement of customers and users in the design and development process; h) the requirements for subsequent provision of products and services; i) the level of control expected for the design and development process by customers and other relevant interested parties. [Outcome 8]

© ISO/IEC 2017 – All rights reserved
Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

Inputs
06-1 Improvement procedure [Outcome 4]
04-6 Product/service process lifecycle model [Outcome 3]
03-26 Product/service provision lifecycle model [Outcome 4]
Outputs
04-1 Audit (MS) schedule [Outcome 8]
04-3 Audit programme plan [Outcome 8]
12-01 Communication process requirements [Outcome 1]
12-03 Documentation management requirements [Outcome 1]
12-04 Improvement opportunity evaluation criteria [Outcome 2]
05-1 Improvement policy [Outcome 1]
06-1 Improvement procedure [Outcome 3]
12-06 Infrastructure requirements [Outcome 1]
04-5 Management review schedule [Outcome 8]
12-07 Management system change evaluation criteria [Outcome 1]
03-20 Management system strategy: roles and responsibilities [Outcome 5]
03-22 MS Measurement information gathering events [Outcome 8]
03-24 MS Measurement methods [Outcome 7]
12-09 MS Resource requirements [Outcome 6]
12-10 Organizational competence requirements [Outcome 5]
12-11 Organizational roles and responsibilities [Outcome 5]
12-12 Process environment requirements [Outcome 1]
04-6 Product/service process lifecycle model [Outcomes 1,2,4,7,8]
03-29 Product/service objectives [Outcome 1]
03-26 Product/service provision lifecycle model [Outcomes 3,4,5,6,7]
03-30 Project/service measures [Outcome 7]
03-31 Project/service resource needs [Outcome 6]
03-32 Project/service roles and responsibilities [Outcome 5]
03-33 Project/service schedule [Outcome 8]
05-2 Quality policy [Outcome 1]
08-54 Risk and opportunity identification [Outcome 8]
03-36 Risk and opportunity identification criteria [Outcome 1]
04-7 Risk management plan [Outcome 8]

© ISO/IEC 2017 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

5.10 COM.09 Operational implementation and control

Process ID	COM.09
Name	Operational implementation and control
Purpose	The purpose of the operational implementation and control process is to deploy and control the execution and performance of operational and organizational processes.
Outcomes	As a result of successful implementation of this process: a) the required roles, responsibilities and authorities are allocated; b) the required resources are allocated and applied; c) actions required to achieve the management system objectives are implemented; d) suitability and effectiveness of the actions taken to achieve the management system objectives are reviewed; e) deviations from planned arrangements are corrected when targets are not achieved; f) data is collected and analysed as a basis for understanding the behaviour of and to demonstrate the suitability and effectiveness of the processes.
Base Practices	COM.09.BP.1 **Allocate roles, responsibilities and authorities.** Allocate the required roles, responsibilities and authorities. Top management ensures that the responsibilities and authorities for relevant roles are communicated and understood within the organization. [Outcome 1] COM.09.BP.2 **Allocate resources.** Allocate and apply the required resources. The organization: a) provides the resources needed for the establishment, implementation, maintenance and continual improvement of the quality management system; b) determines the persons necessary for the effective implementation of its quality management system and for the operation and control of its processes; c) provides the persons necessary for the effective implementation of its quality management system and for the operation and control of its processes; d) ensures that the resources provided are suitable for the specific type of monitoring and measurement activities being undertaken; e) ensure that the resources provided are maintained to ensure their continuing fitness for their purpose. [Outcome 2]

© ISO/IEC 2017 – All rights reserved
Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

	COM.09.BP.3 **Perform process activities.** Perform process activities. The organization: a) monitors and reviews information about these external and internal issues; b) monitors and reviews information about interested parties and their relevant requirements; c) evaluates the effectiveness of the actions taken; d) ensures that contract or order requirements differing from those previously defined are resolved; e) ensures the adequacy of requirements prior to their communication to the external provider; f) maintains an audit programme(s) including the frequency, methods, responsibilities, planning requirements and reporting, which shall take into consideration the importance of the processes concerned, changes affecting the organization, and the results of previous audits. [Outcome 3] COM.09.BP.4 **Review process activities.** Review process activities. [Outcome 4] COM.09.BP.5 **Correct deviations.** Correct deviations from planned arrangements when targets are not achieved. [Outcome 5] COM.09.BP.6 **Collect and analyse data.** Collect and analyse data as a basis for understanding the behaviour of, and to demonstrate the suitability and effectiveness of the processes. [Outcome 6] COM.10.BP.5 **Analyse the collected data.** Analyse the collected data in order to evaluate the quality management system performance, the effectiveness of the quality management system, as well as the effectiveness of any action taken within the scope of the quality management system. [Outcome 6]
Inputs	
08-33 Process change evaluation record [Outcome 6] 11-07 Process change request [Outcome 6]	
Outputs	
03-09 Management system strategy: Establish the management system [Outcomes 3,4] 02-3 Measuring equipment asset list [Outcome 2] 02-4 Measuring equipment maintenance log [Outcome 2] 08-22 MS Implementation log [Outcome 3] 08-23 MS Implementation review record [Outcomes 3,4] 02-5 MS Measurement information collection log [Outcome 3] 02-6 MS Performance measurement data [Outcome 6] 08-24 MS Resources provision record [Outcome 2] 08-31 Personnel competency records [Outcome 4] 08-33 Process change evaluation record [Outcome 5] 11-07 Process change request [Outcome 5] 08-45 Product/service requirements review record [Outcome 4] 03-34 Quality objectives [Outcome 4] 08-57 Roles and responsibilities assignment record [Outcome 1] 08-62 Training record [Outcome 4]	

© ISO/IEC 2017 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

5.11 COM.10 Performance evaluation

Process ID	COM.10
Name	Performance evaluation
Purpose	The purpose of performance evaluation is to collect and analyse data that will be used to evaluate the performance of the management system and the business processes in terms of the defined objectives.
Outcomes	As a result of successful implementation of this process: a) performance monitoring and measurement needs are defined; b) performance measures derived from the performance measurement needs are identified; c) performance measurement methods supportive of the performance measures are identified; d) data is collected using the identified performance measurement methods. e) the collected performance data is analysed.
Base Practices	COM.10.BP.1 **Determine what needs to be monitored.** Determine what needs to be monitored and measured. [Outcome 1] COM.10.BP.2 **Determine appropriate performance measures.** Determine appropriate performance measures that support the performance measurement needs. [Outcome 2] COM.10.BP.3 **Determine the appropriate methods for monitoring, measurement, analysis and evaluation.** Determine the appropriate methods for monitoring, measurement, analysis and evaluation, as well as how the results will be evaluated. [Outcome 3] COM.10.BP.4 **Monitor and measure the quality management system performance.** Collect and verify data on the quality management system performance of the organization. [Outcome 4] COM.10.BP.5 **Analyse the collected data.** Analyse the collected data in order to evaluate the quality management system performance, the effectiveness of the quality management system, as well as the effectiveness of any action taken within the scope of the quality management system. [Outcome 5]

© ISO/IEC 2017 – All rights reserved
Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

Inputs
03-23 MS Measurement information needs [Outcome 2]
03-24 MS Measurement methods [Outcome 4]
02-6 MS Performance measurement data [Outcome 5]
03-30 Project/service measures [Outcome 3]
03-34 Quality objectives [Outcome 2]
Outputs
09-01 Customer satisfaction evaluation report [Outcome 5]
09-03 Management system conformity evaluation report [Outcome 5]
03-23 MS Measurement information needs [Outcome 1]
03-24 MS Measurement methods [Outcome 3]
02-6 MS Performance measurement data [Outcomes 4,5]
09-04 Planning performance evaluation report [Outcome 5]
09-05 Process capability assessment report [Outcome 5]
09-08 Product/service conformity evaluation report [Outcome 5]
03-30 Project/service measures [Outcome 2]
03-34 Quality objectives [Outcome 1]

5.12 COM.11 Risk management

Process ID	COM.11
Name	Risk management
Purpose	The purpose of risk management is to identify, analyse, evaluate, treat and monitor risks.
Outcomes	As a result of successful implementation of this process: a) risks are identified; b) identified risks are analysed; c) risks are evaluated against defined criteria; d) risks are selected for treatment; e) selected risks are treated.

© ISO/IEC 2017 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

Base Practices	COM.11.BP.1 **Identify risks.** Identify risks and opportunities. The following may be considered for identifying such uncertainties: — potential occurrence of set of circumstances and their consequences; — set of circumstances and their consequences which may potentially not occur; — potential consequences, which may affect objectives but where such consequences do not appear to be linked to specific risk source, type or sequence of events; — changes in the internal or external environment leading to a state consisting of factors previously unknown to the organization. These are sometimes also referred to as "known unknowns"; — changes in the internal or external environment leading to a state where knowledge of the organization about its environment may become invalidated or irrelevant; — gradual changes in the internal or external environment which individually may not have any effect on objectives but their repetitive occurrences overtime can result in significant changes to one or more factors resulting in a single or chain of events and consequences. [Outcome 1] COM.11.BP.2 **Analyse risks.** Analyse risks. The analysis of risks may include: — likelihood of events and consequences occurring/not occurring; — scale of consequences, which can result from events — speed and duration at which events or uncertainties can occur and progress — duration over which events or uncertainties can occur; — level of effectiveness of the design of existing risk treatments; — level of effectiveness of the operation of existing risk treatments; — change in other risk analysis measures, if some or all of existing treatments were absent or are assumed to be ineffective; — likelihood of achieving the objectives considering all other inputs captured during risk analysis; — level of confidence on the various measures captured during risk analysis — the level of sensitivity of the various measures to preconditions and assumptions. [Outcome 2] COM.11.BP.3 **Evaluate risks.** Evaluate risks against defined criteria. The purpose of risk evaluation is to decide whether a risk is acceptable or unacceptable to the organization in relation to its objectives. This involves comparing the level of risk found during the analysis process with the previously defined risk criteria. Based on this comparison, treatment should be considered. [Outcome 3] COM.11.BP.4 **Select risks for treatment.** Select risks for treatment. [Outcome 4] COM.11.BP.5 **Treat risks.** Treat selected risks. Risk treatment involves selecting one or more options for responding to risks and implementing those options. Risk treatment involves a cyclical process of: — formulating and selecting risk treatment; — implementing risk treatment; — deciding whether residual risk levels are acceptable; — if not acceptable, generating further risk treatment; — assessing the effectiveness of that treatment; — potential evolution over time. [Outcome 5] COM.11.BP.6 **Identify opportunities.** One of the options for treating risk involve taking or increasing the risk in order to pursue an opportunity. [Outcome 5]

© ISO/IEC 2017 – All rights reserved
Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

Inputs
09-10 Risk analysis report [Outcome 3]
08-54 Risk and opportunity identification [Outcome 2]
08-55 Risk assessment review record [Outcome 4]
04-8 Risk treatment plan [Outcome 5]
Outputs
09-10 Risk analysis report [Outcome 2]
08-54 Risk and opportunity identification [Outcome 1]
08-55 Risk assessment review record [Outcome 3]
08-56 Risk treatment action log [Outcome 5]
04-8 Risk treatment plan [Outcome 4]

5.13 ORG.01 Asset management

Process ID	ORG.01
Name	Asset management
Purpose	The purpose of the asset management process is to establish and maintain the integrity of all identified product assets.
Outcomes	As a result of successful implementation of this process: a) items requiring asset management are identified; b) asset status is known; c) changes to assets under management are controlled; d) the integrity of assets is assured.
Base Practices	ORG.01.BP.1 **Identify Items.** Identify Items requiring asset management. [Outcome 1] ORG.01.BP.2 **Determine asset status.** Determine the status of the asset. [Outcome 2] ORG.01.BP.3 **Control asset changes.** Control changes to assets under management. [Outcome 3] ORG.01.BP.4 **Assure asset integrity.** Assure the integrity of assets. [Outcome 4]
Inputs	
07-1 Customer asset [Outcomes 2,3,4]	
Outputs	
07-1 Customer asset [Outcomes 1,4]	
08-12 Customer asset communication record [Outcome 2]	

5.14 ORG.02 Measurement resource management

Process ID	ORG.02
Name	Measurement resource management
Purpose	The purpose of the measurement resource management process is to ensure that measurement resources used to perform tests and calibrations is acquired, controlled and maintained.

© ISO/IEC 2017 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

Outcomes	As a result of successful implementation of this process: a) requirements for measurement resources are defined; b) measurement resources for performing tests and calibrations is acquired; c) measurement resource items are identified; d) the calibration status of measurement resource items is confirmed at appropriate intervals; e) measurement resources are maintained in accordance with defined requirements; f) mal-performing measurement resources are segregated and controlled in order to avoid unintended use.
Base Practices	ORG.02.BP.1 **Define measurement resource requirements.** Define requirements for test and calibration measurement resources. [Outcome 1] ORG.02.BP.2 **Acquire measurement resources.** Acquire measurement resources for performing tests and calibrations. [Outcome 2] ORG.02.BP.3 **Identify measurement resources.** Identify measurement resources. [Outcome 3] ORG.02.BP.4 **Confirm calibration status.** Confirm the calibration status of measurement resources, as applicable at appropriate intervals. [Outcome 4] ORG.02.BP.5 **Maintain measurement resources.** Maintain measurement resources in accordance with defined requirements. [Outcome 5] ORG.02.BP.6 **Segregate mal-performing measurement resources.** Segregate and control mal-performing measurement resources in order to avoid unintended use. [Outcome 6]
Inputs	
02-2 Measurement resource identification [Outcomes 4,5,6]	
Outputs	
02-1 Measurement resource calibration log [Outcomes 4,6] 02-2 Measurement resource identification [Outcome 3] 12-12 Process environment requirements [Outcome 1]	

5.15 ORG.03 Supplier management

Process ID	ORG.03
Name	Supplier management
Purpose	The purpose of the supplier management process is to ensure supplier products/services are managed and integrated into the delivered product/service to meet the agreed requirements.
Outcomes	As a result of successful implementation of this process: a) suppliers are identified; b) products/services to be provided are negotiated with each supplier; c) determine the roles and relationships between the organization and its suppliers and, where applicable, between suppliers; d) the capability of subcontracted suppliers to meet obligations is confirmed; e) supplier obligations to meet requirements are monitored; f) supplier performance against agreed criteria is monitored.

© ISO/IEC 2017 – All rights reserved
Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

Base Practices	ORG.03.BP.1 **Identify suppliers.** Identify suppliers. [Outcome 1] ORG.03.BP.2 **Negotiate products/services.** Negotiate products/services to be provided with each supplier. [Outcome 2] ORG.03.BP.3 **Determine roles and relationships.** Determine the roles and relationships between the organization and its suppliers and, where applicable, between suppliers. [Outcome 3] ORG.03.BP.4 **Confirm supplier capability.** Confirm the capability of subcontracted suppliers to meet obligations. [Outcome 4] ORG.03.BP.5 **Monitor supplier obligations.** Monitor supplier obligations to meet requirements. [Outcome 5] ORG.03.BP.6 **Monitor supplier performance.** Monitor supplier performance against agreed criteria. [Outcome 6]
Inputs	
01-2 Supplier agreement [Outcomes 3,4,5] 03-38 Supplier performance evaluation criteria [Outcome 6] 08-60 Supplier role assignments list [Outcome 2]	
Outputs	
01-1 Service level agreement [Outcome 2] 03-37 Sub-contracted supplier roles and responsibilities [Outcome 3] 01-2 Supplier agreement [Outcome 2] 08-58 Supplier agreement review record [Outcome 5] 08-59 Supplier capability assessment record [Outcome 4] 09-11 Supplier performance evaluation report [Outcome 6] 08-60 Supplier role assignments list [Outcome 1]	

5.16 TEC.01 Configuration management

Process ID	TEC.01
Name	Configuration management
Purpose	The purpose of the configuration management process is to identify, control, record, track, report and verify all identified product/service components.
Outcomes	As a result of successful implementation of this process: a) items requiring configuration management are identified; b) the status of configuration items and modifications is known; c) changes to items under configuration management are controlled; d) the integrity of systems, products/services and product/service components is assured; e) the configuration of released items is controlled.

© ISO/IEC 2017 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

Base Practices	TEC.01.BP.1 **Identify configuration items.** Identify items requiring configuration management. [Outcome 1] TEC.01.BP.2 **Identify configuration item status.** Identify the status of configuration items and modifications. [Outcome 2] TEC.01.BP.3 **Control changes.** Control changes to items under configuration management. [Outcome 3] TEC.01.BP.4 **Assure the integrity of items.** Assure the integrity of systems, products/services and product/service components. [Outcome 4] TEC.01.BP.5 **Control released items.** Control the configuration of released items. [Outcome 5]
Inputs	
07-3 Product/service component [Outcome 1] 12-16 Product/service component change evaluation criteria [Outcome 3] 11-08 Product/service component change request [Outcome 3] 08-40 Product/service component change request approval record [Outcome 3] 10-1 Product/service component repository [Outcomes 4,5] 12-17 Product/service release criteria [Outcome 5]	
Outputs	
08-06 Configuration item change log [Outcome 3] 07-2 Product/service [Outcome 5] 07-3 Product/service component [Outcome 5] 08-39 Product/service component change evaluation result [Outcome 3] 10-1 Product/service component repository [Outcome 1] 08-41 Product/service component repository access log [Outcomes 3,4] 09-06 Product/service configuration evaluation report [Outcome 4] 09-07 Product/service configuration status report [Outcome 2] 08-43 Product/service release approval record [Outcome 5] 03-27 Product/service taxonomy [Outcome 1]	

5.17 TEC.02 Process changes

Process ID	TEC.02
Name	Process changes
Purpose	The purpose of the process change process is to manage changes in order to improve the effectiveness and/or efficiency of the process.
Outcomes	As a result of successful implementation of this process: a) process change requests are classified; b) process change requests are assessed using defined criteria; c) process changes are implemented, as appropriate.

© ISO/IEC 2017 – All rights reserved
Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

Base Practices	TEC.02.BP.1 **Classify process change requests.** Classify process change requests. The organization reviews changes for production or service provision, to the extent necessary to ensure continuing conformity with requirements. [Outcome 1] TEC.02.BP.2 **Assess process change requests.** Assess process change requests using defined criteria. [Outcome 2] TEC.02.BP.3 **Implement process changes.** Implement process changes, as appropriate. [Outcome 3]
Inputs	
08-32 Process change approval record [Outcome 3] 08-34 Process change request review record [Outcome 2]	
Outputs	
08-32 Process change approval record [Outcome 2] 08-33 Process change evaluation record [Outcome 2] 02-7 Process change implementation log [Outcome 3] 08-34 Process change request review record [Outcome 1]	

5.18 TEC.03 Product/service changes

Process ID	TEC.03
Name	Product/service changes
Purpose	The purpose of the product/service change process is to manage changes through the product/service lifecycle.
Outcomes	As a result of successful implementation of this process: a) product/service change requests are identified and classified; b) product/service change requests are assessed using defined criteria; c) product/service changes are implemented, as appropriate.
Base Practices	TEC.03.BP.1 **Identify product/service change requests.** Identify and classify product/service change requests. [Outcome 1] TEC.03.BP.2 **Assess product/service change requests.** Assess product/service change requests using defined criteria. [Outcome 2] TEC.03.BP.3 **Implement product/service changes.** Implement product/service changes, as appropriate. [Outcome 3]
Inputs	
08-42 Product/service design change evaluation result [Outcome 3] 11-09 Product/service design change request [Outcome 2]	
Outputs	
08-42 Product/service design change evaluation result [Outcome 2] 08-35 Product/service design change log [Outcome 3] 11-09 Product/service design change request [Outcome 1]	

5.19 TEC.04 Product/service design

Process ID	TEC.04
Name	Product/service design

© ISO/IEC 2017 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

Purpose	The purpose of the product/service design process is to provide a design for the product/service that implements the requirements and can be verified against the requirements.
Outcomes	As a result of successful implementation of this process: a) design for each product/service component is developed in accordance with defined requirements; b) external and internal interfaces for each product/service component are defined.
Base Practices	TEC.04.BP.1 **Design each product/service component.** Develop the design for each product/service component in accordance with defined requirements. [Outcome 1] TEC.04.BP.2 **Define external and internal interfaces.** Define the external and internal interfaces for each product/service component. [Outcome 2]
Inputs	
03-28 Product/service design [Outcome 2]	
Outputs	
03-28 Product/service design [Outcomes 1,2]	

5.20 TEC.05 Product/service planning

Process ID	TEC.05
Name	Product/ service planning
Purpose	The purpose of the product/service planning process is to produce effective and workable plans to direct product and/or service plan implementation.
Outcomes	As a result of successful implementation of this process: a) the objectives for the scope of the work associated with the development of the product/service are defined; b) the feasibility of achieving the objectives of the product/service development with available resources and constraints are evaluated; c) the tasks and resources necessary to complete the product/service development are sized and estimated; d) the responsibilities and authorities needed at each stage of product/service development are identified; e) interfaces between customer and relevant interested parties are identified; f) plans for the development of the product/service are developed.

© ISO/IEC 2017 – All rights reserved
Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

Base Practices	TEC.05.BP.1 **Define objectives.** Define the objectives for the scope of the work associated with the development of the product/service. [Outcome 1] TEC.05.BP.2 **Evaluate feasibility.** Evaluate the feasibility of achieving the objectives of the product/ service development with available resources and constraints. [Outcome 2] TEC.05.BP.3 **Estimate tasks and resources.** Size and estimate the tasks and resources necessary to complete the product/service development. [Outcome 3] TEC.05.BP.4 **Identify responsibilities and authorities.** Identify the responsibilities and authorities needed at each stage of product/service development. [Outcome 4] TEC.05.BP.5 **Identify interfaces.** Identify interfaces between customer and relevant interested parties. [Outcome 5] TEC.05.BP.6 **Develop plans.** Develop plans for the development of the product/ service. [Outcome 6]
Inputs	
09-09 Product/service feasibility analysis report [Outcome 3]	
Outputs	
09-09 Product/service feasibility analysis report [Outcome 2] 02-8 Product/service review schedule [Outcome 6] 03-30 Project/service measures [Outcome 6]	

5.21 TEC.06 Product/service quarantine

Process ID	TEC.06
Name	Product/service quarantine
Purpose	The purpose of the product/service quarantine process is to ensure that products/ services that do not meet customer requirements are controlled with a view to prevent unintended use.
Outcomes	As a result of successful implementation of this process: a) product/service that does not conform to requirements is identified; b) nonconforming product/service is placed under quarantine; c) alternative approaches are identified regarding disposition of the nonconforming product/service; d) agreed actions are taken regarding disposition of nonconforming product/service; e) product/service that has been corrected is re-verified to demonstrate conformity to requirements; f) action is taken to prevent re-occurrence of the identified product/service nonconformity; g) product/service is released from quarantine when authorized.

© ISO/IEC 2017 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

Base Practices	TEC.06.BP.1 **Identify non-conforming product/services.** Identify product/service that does not conform to requirements. [Outcome 1] TEC.06.BP.2 **Quarantine nonconforming product/services.** Place under quarantine nonconforming product/services. [Outcome 2] TEC.06.BP.3 **Identify alternative approaches.** Identify alternative approaches regarding disposition of the nonconforming product/service. [Outcome 3] TEC.06.BP.4 **Take agreed actions.** Take agreed actions regarding disposition of nonconforming product/service. [Outcome 4] TEC.06.BP.5 **Re-verify corrected product/service.** Re-verify product/service that has been corrected to demonstrate conformity to requirements. [Outcome 5] TEC.06.BP.6 **Take action to prevent re-occurrence.** Take action to prevent re-occurrence of the identified product/service nonconformity. [Outcome 6] TEC.06.BP.7 **Release product/service from quarantine.** Release product/service from quarantine when authorized. [Outcome 7]
Inputs	
08-29 Non-conformity disposition record [Outcome 4] 08-30 Non-conformity record [Outcome 2] 11-05 Nonconforming product corrective action request [Outcome 7] 08-26 Nonconforming product disposition evaluation result [Outcome 5] 11-06 Nonconforming product quarantine request [Outcome 3] 08-28 Nonconforming product re-verification record [Outcome 6]	
Outputs	
08-29 Non-conformity disposition record [Outcome 3] 08-30 Non-conformity record [Outcome 1] 11-05 Nonconforming product corrective action request [Outcome 6] 11-04 Nonconforming product corrective action request [Outcome 4] 08-26 Nonconforming product disposition evaluation result [Outcome 4] 08-27 Nonconforming product quarantine release authorization [Outcome 7] 11-06 Nonconforming product quarantine request [Outcome 2] 08-28 Nonconforming product re-verification record [Outcome 5]	

5.22 TEC.07 Product/service requirements

Process ID	TEC.07
Name	Product/ service requirements
Purpose	The purpose of the product/service requirements process is to establish and agree the requirements for products and/or services.
Outcomes	As a result of successful implementation of this process: a) the required characteristics and context of use of products/services are identified; b) the constraints for a product/service solution are defined; c) the requirements for the product/service are defined; d) the requirements for validating the product/service are defined.

© ISO/IEC 2017 – All rights reserved
Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

Base Practices	TEC.07.BP.1 **Identify product/service characteristics.** Identify the required characteristics and context of use of products/services. [Outcome 1] TEC.07.BP.2 **Identify solution constraints.** Identify the constraints for a product/service solution. [Outcome 2] TEC.07.BP.3 **Define requirements.** Define the requirements for the product/service. [Outcome 3] TEC.07.BP.4 **Define validation requirements.** Define the requirements for validating the product/ service. [Outcome 4]
Inputs	
12-18 Product/service requirements [Outcomes 2,3,4]	
Outputs	
12-18 Product/service requirements [Outcomes 1,2,3] 08-45 Product/service requirements review record [Outcome 3]	

5.23 TEC.08 Product/service review

Process ID	TEC.08
Name	Product/service review
Purpose	The purpose of the product/service review process is to maintain a common understanding with customer what should be done to help ensure development of a product/ service that meets the customer and relevant interested party requirements. Product/service reviews are held at both management and technical levels throughout the product/service lifecycle.
Outcomes	As a result of successful implementation of this process: a) criteria for the review of product/ service is identified; b) review participants are identified; c) required review activities are performed; d) action items are identified.
Base Practices	TEC.08.BP.1 **Identify criteria.** Identify criteria for the review of product/service. [Outcome 1] TEC.08.BP.2 **Identify participants.** Identify review participants. [Outcome 2] TEC.08.BP.3 **Perform reviews.** Perform the required review activities [Outcome 3] TEC.08.BP.4 **Identify action items.** Identify action items. [Outcome 4]
Inputs	
12-13 Product review criteria [Outcome 3] 08-45 Product/service requirements review record [Outcome 4] 08-47 Product/service review participant list [Outcome 3]	
Outputs	
12-13 Product review criteria [Outcome 1] 08-45 Product/service requirements review record [Outcomes 3,4] 08-52 Product/service review action log [Outcome 4] 08-47 Product/service review participant list [Outcome 2]	

© ISO/IEC 2017 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

5.24 TEC.09 Product/service supply

Process ID	TEC.09
Name	Product/service supply
Purpose	The purpose of the product/service supply process is to provide product/ service to meet the agreed customer requirements.
Outcomes	As a result of successful implementation of this process: a) product/service request(s) received from the customer are confirmed; b) product/service request(s) are evaluated in terms of mandated product/service delivery criteria; c) a response to a customer's product/service request is produced; d) an agreement is established between the customer and the supplier for providing the product/service; e) the product/service is provided to the customer in accordance with the agreed requirements; f) conformity to applicable stated and implied customer and supplier requirements by internal processes and/or product/service provided is verified.
Base Practices	TEC.09.BP.1 **Confirm product/service request(s).** Confirm product/service request(s) received from the customers. [Outcome 1] TEC.09.BP.2 **Evaluate product/service request(s).** Evaluate product/service request(s) in terms of mandated product/service delivery criteria. [Outcome 2] TEC.09.BP.3 **Produce a response to a request.** Produce a response to a customer's product/ service request. [Outcome 3] TEC.09.BP.4 **Establish an agreement.** Establish an agreement between the customer and the supplier for providing the product/service. [Outcome 4] TEC.09.BP.5 **Provide product/service.** Provide the product/service to the customer in accordance with the agreed requirements. [Outcome 5] TEC.09.BP.6 **Verify conformity to requirements.** Verify conformity to applicable stated and implied customer and supplier requirements by internal processes and/ or product provided. [Outcome 6]
Inputs	
03-21 Management system strategy: supplier capability [Outcome 3]	
12-14 Product/service acceptance criteria [Outcomes 5,6]	
08-44 Product/service requirements communication record [Outcome 4]	
08-45 Product/service requirements review record [Outcome 3]	
03-35 Request for proposal (RFP) [Outcome 2]	
Outputs	
03-21 Management system strategy: supplier capability [Outcome 2]	
08-37 Product delivery record [Outcome 5]	
12-14 Product/service acceptance criteria [Outcome 4]	
08-36 Product/service release approval record [Outcomes 5,6]	
08-44 Product/service requirements communication record [Outcome 3]	
08-45 Product/service requirements review record [Outcome 2]	
08-49 Product/service validation record [Outcome 6]	
03-35 Request for proposal (RFP) [Outcome 1]	

© ISO/IEC 2017 – All rights reserved
Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

5.25 TEC.10 Product/service validation

Process ID	TEC.10
Name	Product/service validation
Purpose	The purpose of the product/service validation process is to confirm that the requirements for a specific intended use of the product/service are fulfilled.
Outcomes	As a result of successful implementation of this process: a) products/ services to be validated are selected; b) criteria for validation of all required process results are identified; c) required validation activities are performed; d) problems are identified.
Base Practices	TEC.10.BP.1 **Select validation results.** Select process results to be validated. [Outcome 1] TEC.10.BP.2 **Identify criteria.** Identify criteria for validation of all required process results. [Outcome 2] TEC.10.BP.3 **Perform validation activities.** Perform required validation activities. [Outcome 3] TEC.10.BP.4 **Identify problems.** Identify problems. [Outcome 4]
Inputs	
08-38 Product/service candidate list [Outcome 3] 12-19 Product/service validation criteria [Outcome 3] 08-49 Product/service validation record [Outcome 4]	
Outputs	
08-38 Product/service candidate list [Outcome 1] 08-48 Product/service validation action log [Outcome 4] 12-19 Product/service validation criteria [Outcome 2] 08-49 Product/service validation record [Outcome 3]	

5.26 TEC.11 Product/service verification

Process ID	TEC.11
Name	Product/service verification
Purpose	The purpose of the product/service verification process is to confirm that each product/service properly reflects the specified requirements.
Outcomes	As a result of successful implementation of this process: a) products/services to be verified are selected; b) criteria for verification of all required process results is identified; c) required verification activities are performed; d) defects are identified.

© ISO/IEC 2017 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

Base Practices	TEC.11.BP.1 **Select verification items.** Select products/services to be verified. [Outcome 1] TEC.11.BP.2 **Identify criteria.** Identify criteria for verification of all required process results. [Outcome 2] TEC.11.BP.3 **Perform verification.** Perform required verification activities. [Outcome 3] TEC.11.BP.4 **Identify defects.** Identify defects. [Outcome 4]
Inputs	
08-38 Product/service candidate list [Outcome 3] 12-20 Product/service verification criteria [Outcome 3]	
Outputs	
08-38 Product/service candidate list [Outcome 1] 08-50 Product/service verification action log [Outcome 4] 12-20 Product/service verification criteria [Outcome 2] 08-51 Product/service verification record [Outcome 3]	

5.27 TOP.01 Leadership

Process ID	TOP.01
Name	Leadership
Purpose	The purpose of Leadership is to direct the organization in the achievement of its vision, mission, strategy and goals, through assuring the definition of a management system, a management system policy, and management system objectives.
Outcomes	As a result of successful implementation of this process: a) the context of the organization, including the expectations of its relevant interested parties, are understood and analysed; b) the scope of management system activities is defined, taking the context of the organization into consideration; c) the management system policy and objectives are defined; d) the management system and operational process strategy is determined; e) commitment and leadership with respect to the management system is demonstrated.

© ISO/IEC 2017 – All rights reserved
Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

Base Practices	TOP.01.BP.1 **Determine external and internal issues that are relevant to the organization and analyse their impacts.** Determine external and internal issues that are relevant to the purpose of the assessed organization and that affect its ability to achieve the intended outcome(s) of its quality management system. [Outcome 1] TOP.01.BP.2 **Determine relevant the interested parties and analyse their requirements.** Determine the relevant interested parties that are relevant to the quality management system and establish appropriate contacts with them. [Outcome 1] TOP.01.BP.3 **Determine the scope of the quality management system.** Determine the boundaries and applicability of the quality management system, taking into consideration the context of the organization, the requirements of relevant interested parties and the interfaces and dependencies between activities performed by the organization, and those that are performed by other organization. [Outcome 2] TOP.01.BP.4 **Define a quality policy.** Define a quality policy that is appropriate to the purpose of the organization. [Outcome 3] TOP.01.BP.5 **Define quality objectives.** Define quality objectives at relevant functions and levels, which are measurable, consistent with the quality policy. [Outcome 3] TOP.01.BP.6 **Determine process strategy.** Determine the management system and operational process strategy. [Outcome 4] TOP.01.BP.7 **Integrate the quality management system requirements into the business processes of the organization.** Ensure the integration of the quality management system requirements into the business processes of the organization. [Outcome 5] TOP.01.BP.8 **Demonstrate leadership by enabling contributions to organizational effectiveness.** Direct and support persons to contribute to the effectiveness of the quality management system and support other relevant management roles to demonstrate their leadership as it applies to their areas of responsibility. [Outcome 5]

© ISO/IEC 2017 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017

Inputs
03-04 Management system (MS) scope [Outcome 3]
03-10 Management system strategy: external and internal issues [Outcome 2]
03-25 MS Relevant Interested parties [Outcome 2]
12-08 MS Relevant Interested parties MS expectations [Outcome 2]
05-2 Quality policy [Outcomes 4,5]
Outputs
08-18 Information status record [Outcome 4]
03-04 Management system (MS) scope [Outcome 2]
03-05 Management system strategy: change management [Outcome 4]
03-06 Management system strategy: customer focus [Outcome 5]
03-07 Management system strategy: customer property [Outcome 4]
03-08 Management system strategy: documentation [Outcome 4]
03-09 Management system strategy: Establish the management system [Outcome 4]
03-10 Management system strategy: external and internal issues [Outcome 1]
03-11 Management system strategy: improvement [Outcome 4]
03-12 Management system strategy: knowledge [Outcome 4]
03-13 Management system strategy: management commitment [Outcomes 3,5]
03-14 Management system strategy: measurement [Outcome 4]
03-15 Management system strategy: outsourcing [Outcome 4]
03-16 Management system strategy: planning [Outcome 4]
03-17 Management system strategy: process environment [Outcome 4]
03-18 Management system strategy: product preservation [Outcome 4]
03-25 MS Relevant Interested parties [Outcome 1]
12-08 MS Relevant Interested parties MS expectations [Outcome 1]
12-15 Product/service characteristics [Outcome 4]
03-34 Quality objectives [Outcome 3]
05-2 Quality policy [Outcome 3]

6 Process capability indicators

6.1 General

This clause presents the process capability indicators related to the process capability attributes (process attribute, PA) associated with capability levels 1 to 5 defined in the capability dimension of the process assessment model. Process capability indicators are the means of achieving the capabilities addressed by the considered process capability attributes. Evidence of process capability indicators supports the judgment of the degree of achievement of the process capability attribute. Clause 5 describes the assessment indicators for process performance which is characterized by Level 1 process capability.

© ISO/IEC 2017 – All rights reserved
Documents
Document Sharing Hub
Full document details: PD ISO/IEC TS 33073:2017