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**Information technology — Service  
management of infrastructure —**

**Part 1:  
Process reference model (PRM) for  
data centre services**

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[ISO/IEC TR 22564-1](https://standards.iteh.ai/catalog/standards/sist/ffe8dd88-7e4b-4b43-905d-bf85c5afde84/iso-iec-tr-22564-1)

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## Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

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](http://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](http://www.iso.org/patents)) or the IEC list of patent declarations received (see <http://patents.iec.ch>).

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

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 40, *IT Service Management and IT Governance*.

A list of all parts in the ISO/IEC 22564 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

## Introduction

The purpose of this document is to facilitate the development of a process assessment model (PAM) described in ISO/IEC 22564-2<sup>1)</sup>.

ISO/IEC 33002 describes the requirements for the conduct of an assessment. ISO/IEC 33004 describes the requirements for process reference, process assessment and maturity models. ISO/IEC 33020 describes the measurement scale for assessing the process quality characteristic of process capability. ISO/IEC 33001 describes the concepts and terminology used for process assessment. [Annex A](#) provides the statement of conformity in accordance with the requirements of ISO/IEC 33004 concerning process reference models.

A process reference model (PRM) is a model comprising definitions of processes described in terms of process purpose and outcomes, together with an architecture describing the relationships between the processes.

This PRM specified in this document describes the processes including the service management particularly for a data centre. This PRM follows the management process of ISO/IEC 20000-1, ISO/IEC 27001, ISO 22301 and other related International Standards for its data centre background. Each process of this PRM is described in terms of a purpose and outcomes. The PRM is particularly applicable for data centre and not intended to be used for a conformity assessment audit.

This document:

- a) covers capability items that can reflect data centre service capability;
- b) is applicable to any organization operating a data centre;
- c) serves as a process reference model for data centres;
- d) acts as a basis for the process assessment model.

The PRM consists of three capability domains and eleven capability sub-domains. It is illustrated in [Figure 1](#). Each capability sub-domain covers a diversity of capability items that enables a data centre to manage, deliver, improve and administer IT-related activities and represents the ability of a data centre to control these activities.

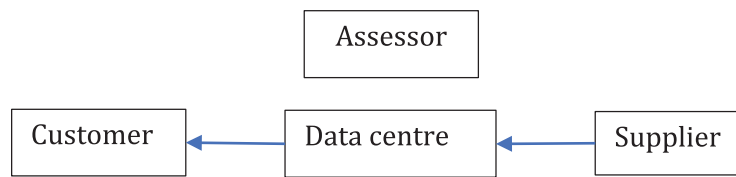
Process Categories and Processes				
<b>Strategic development</b>				
Strategic control		Inherent innovation		Sustainable development
<b>Operation assurance</b>				
Routine management	Service support	Service delivery	Safety management	Quality management
<b>Organizational management</b>				
Management framework		Organization risk		Improvement criteria

**Figure 1 — Framework of the process reference model**

1) To be published. Current stage 00.20.

[Figure 2](#) illustrates the key interest and relationships involved in data centre services.

Data centre interest includes customers, suppliers and assessors.



**Figure 2 — Data centre key interest**

In this PRM, capability items are regarded as processes, and are interpreted as processes hereinafter.

[Clause 3](#) briefly introduces the PRM.

[Clause 4](#) describes the thirty-six processes in this PRM with their purpose and outcomes.

[Annex A](#) provides the statement of conformity in accordance with ISO/IEC 33004.

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# Information technology — Service management of infrastructure —

## Part 1: Process reference model (PRM) for data centre services

### 1 Scope

This document defines a process reference model (PRM) for the domain of service management in a data centre to provide data centre services.

The model specifies a process architecture for the domain and comprises a set of processes. Each process is described in terms of process purpose and outcomes. And a 22 to contain or imply aspects of the process quality characteristic beyond the basic level of any relevant process measurement framework conformant with ISO/IEC 33003.

### 2 Normative references

There are no normative references in this document.

### 3 Terms and definitions

For the purposes of this document, the following definitions apply.

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

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

#### 3.1 assessment

the process of estimating the effectiveness, utilization, and relevance of a service or facility

#### 3.2 capability

ability of an object to realize an output that will fulfil the requirements for that output

[SOURCE: ISO 9000:2015, 3.6.12, modified — Note 1 to entry has been removed.]

#### 3.3 capability domain

collection or combination of similar processes

Note 1 to entry: There are three capability domains for data centre services: strategy, operation, and organization.

#### 3.4 capability sub-domain

associated processes within a *capability domain* (3.3)

#### 3.5 compliance

production and operating activities of a data centre that fulfil specified requirements of the relevant laws, regulations, standards and other contractual obligations

### 3.6

#### **data centre**

organization that provides IT operation services consisting of computer room(s) with infrastructure, personnel, information system hardware, software, information resources, and corresponding rules and regulations, to provide IT services

Note 1 to entry: A computer room normally only includes server room(s).

Note 2 to entry: Information system hardware normally includes physical and virtual resources.

Note 3 to entry: Information resources normally include data.

### 3.7

#### **data centre service**

capabilities and resources of a *data centre* (3.6) that are used to deliver value for stakeholders

### 3.8

#### **data centre service capability**

capability of *data centre* (3.6) resources to deliver data processing and satisfy functional requirements

### 3.9

#### **effectiveness**

extent to which planned activities are realized and planned results achieved

[SOURCE: ISO/IEC 20000-1:2018, 3.1.7]

### 3.10

#### **human resource management**

management of people in organizations (standards.iteh.ai)

Note 1 to entry: Human resource management can include talent management, employee relations and industrial relations, separation, training and development, reward, compensation and other benefits, performance management, grievance management, strategies, metrics, principles, policies decisions, operations, practices and methods.

Note 2 to entry: Human resource management optimizes the contribution of people to support organizational and stakeholder success.

[SOURCE: ISO 30400:2016, 4.6]

### 3.11

#### **incident**

unplanned interruption to a service, a reduction in the quality of a service or an event that has not yet impacted the service to the customer or user

[SOURCE: ISO/IEC 20000-1:2018, 3.2.5]

### 3.12

#### **maturity model**

model derived from one or more specified process assessment model(s) that identifies the process sets associated with the levels in a specified scale of organizational process maturity

[SOURCE: ISO/IEC 33001:2015, 3.3.7]

### 3.13

#### **operation**

job or task consisting of one or more work elements, usually done essentially in one location

[SOURCE: ISO 15531-43:2006, 3.1.21, modified — NOTE was removed.]



**3.14****organization**

person or group of people that has its own functions with responsibilities, authorities and relationships to achieve its objectives

[SOURCE: ISO 9000:2015, 3.2.1, modified — Notes 1 and 2 to entry have been removed.]

**3.15****organizational culture**

collective beliefs, values, attitudes and behaviour of an organization that contribute to the unique social and psychological environment in which it operates

[SOURCE: ISO 22316:2017, 3.3]

**3.16****problem**

cause of one or more actual or potential incidents

[SOURCE: ISO/IEC 20000-1:2018, 3.2.10]

**3.17****process**

set of interrelated or interacting activities that use inputs to deliver an intended result

[SOURCE: ISO 9000:2015, 3.4.1, modified — Notes 1 to 6 to entry have been removed.]

**3.18****process assessment**

disciplined evaluation of an organizational unit's processes against a process assessment model

[SOURCE: ISO/IEC 33001:2015, 3.2.15] [ISO/IEC TR 22564-1](#)

**3.19****process assessment model**

model suitable for the purpose of assessing a specified process quality characteristic, based on one or more process reference models

Note 1 to entry: Process assessment models addressing a specific process quality characteristic can include the identification of the characteristic in the title; for example, a process assessment model addressing process capability can be termed a "process capability assessment model".

[SOURCE: ISO/IEC 33001:2015, 3.3.9]

**3.20****process improvement**

activity to enhance performance of a process

Note 1 to entry: The activity can be recurring or singular.

**3.21****process outcome**

observable result of the successful achievement of the process purpose

Note 1 to entry: An outcome statement describes one of the following: production of an artefact; a significant change in state; meeting of specified constraints, e.g. requirements, goals, etc.

[SOURCE: ISO/IEC 33001:2015, 3.3.11]

**3.22****process performance**

extent to which the execution of a process achieves its purpose

[SOURCE: ISO/IEC 33001:2015, 3.4.7]

### 3.23

#### **process purpose**

high level objective of performing the process and the likely outcomes of effective implementation of the process

Note 1 to entry: The implementation of the process should provide tangible benefits to the stakeholders.

[SOURCE: ISO/IEC 33001:2015, 3.3.13]

### 3.24

#### **process reference model**

model comprising definitions of processes in a domain of application described in terms of process purpose and outcomes, together with an architecture describing the relationships between the processes

[SOURCE: ISO/IEC 33001:2015, 3.3.16]

### 3.25

#### **project management**

coordinated activities to direct and control the accomplishment of agreed deliverables

[SOURCE: ISO/TR 21506:2018, 3.61]

### 3.26

#### **RPO**

#### **recovery point objective**

point to which information used by an activity must be restored to enable the activity to operate on service resumption

Note 1 to entry: Can also be referred to as “maximum data loss”

### 3.27

#### **RTO**

#### **recovery time objective**

period of time following an incident within which

- a) a product or service must be resumed, or
- b) an activity must be resumed, or
- c) resources must be recovered

Note 1 to entry: For products, services and activities, the recovery time objective must be less than the time it would take for the adverse impacts that would arise as a result of not providing a product/service or performing an activity to become unacceptable

### 3.28

#### **service request**

request for information, advice, access to a service or a pre-approved change

[SOURCE: ISO/IEC 20000-1:2018, 3.2.25]

### 3.29

#### **strategy**

organization's overall plan of development, describing the effective use of resources in support of the organization in its future activities

Note 1 to entry: involves setting objectives and proposing initiatives for action

[SOURCE: ISO/IEC/IEEE 24765:2017, 3.4001]

**3.30****sufficiency**

measure of the adequacy of native performance using a standard interchange format

[SOURCE: ISO/IEC 19795-4:2008, 4.17, modified — NOTES 1, 2 and 3 have been removed.]

**3.31****suitability**

degree to which a capability enabler meets stated and implied needs when used in a specified context of use

**3.32****SWOT**

strengths, weaknesses, opportunities, and threats [A Guide to the Project Management Body of Knowledge (PMBOK®Guide) - Fifth Edition]

[SOURCE: ISO/IEC/IEEE 24765:2017, 3.4070]

**4 Overview of process reference model**

ISO/IEC 33004 requires that each process in the PRM has the following descriptive elements

- a) **Name:** the name of a process is a short noun phrase that summarizes the scope of the process, identifying the principal concern of the process, and distinguishes it from other processes within scope of the process reference model.
- b) **Purpose:** the purpose of the process is a high level and overall goal for performing the process.
- c) **Outcomes:** an outcome is an observable result of the successful achievement of the process purpose. Outcomes are measurable, tangible, technical or business results that are achieved by a process. They are observable and assessable.

[Figure 3](#) shows process categories and processes in the Process Reference Model for Data Centre Services.

Process Categories and Processes				
<b>Strategic development</b>				
<b>Strategic control</b>		<b>Inherent innovation</b>		<b>Sustainable development</b>
SD01: Strategic management  SD02: Project management		SD03: Knowledge management  SD04: Innovation management		SD05: Financial management  SD06: Human resource management  SD07: Architecture and technology management
<b>Operation assurance</b>				
<b>Routine management</b>	<b>Service support</b>	<b>Service delivery</b>	<b>Safety management</b>	<b>Quality management</b>
OA01: Monitoring control  OA02: Duty management  OA03: Routine operation management  OA04: Operation planning  OA05: Operational implementation and control	OA06: Service request management  OA07: Incident management  OA08: Problem management  OA09: Change management  OA10: Release and deployment management  OA11: Asset and configuration management	OA12: Service level management  OA13: Availability management  OA14: Capacity management  OA15: IT service continuity management  OA16: Supplier management  OA17: Service reporting	OA18: Information security management  OA19: Health, safety and environment (HSE) management	OA20: Document management  OA21: Audit management  OA22: Management review  OA23: Continual improvement
<b>Organizational management</b>				
<b>Management framework</b>		<b>Organization risk</b>		<b>Improvement criteria</b>
OG01: Function management  OG02: Relationship management		OG03: Compliance management  OG04: Risk management		OG05: Performance management  OG06: Organizational culture

**Figure 3 — Process categories and processes**

The purpose of a process reference model is to define a set of processes that collectively can support the primary aims of a community of interest. A process assessment model uses the same process descriptions provided in the process reference model.