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Information technology — IT asset management —

Part 1: IT asset management systems — Requirements

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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. 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 system engineering*. Participation and contributions were requested in particular from ISO/IEC JTC 1/SC 27 *IT Security Techniques*, ISO/IEC JTC 1/SC 40 *IT Service Management and IT Governance*, and ISO/TC 251 *Asset Management*.

This third edition cancels and replaces the second edition (ISO/IEC 19770-1:2012), which has been technically revised to be a Management System Standard.

A list of all parts in the ISO/IEC 19770 series can be found on the ISO website.

Introduction

This document specifies the requirements for the establishment, implementation, maintenance and improvement of a management system for IT asset management (ITAM), referred to as an "IT asset management system" (ITAMS).

This document provides additional requirements to ISO 55001:2014 which specifies the requirements for the establishment, implementation, maintenance and improvement of a management system for asset management, referred to as an "asset management system". This document includes additional or more detailed requirements which are considered necessary for the management of IT assets. The primary differentiator is the need to manage software assets, with their specific characteristics. Although ISO 55001:2014 can be used to manage software assets if organizations define their scope and relevant requirements appropriately, it is primarily focused on physical assets with little provision for the management of software assets.

There are a number of characteristics of IT assets which create these additional or more detailed requirements. These are described in Annex C. As a result of these characteristics of IT assets, a management system for IT assets will consequently have explicit requirements additional to those in ISO 55001:2014 dealing with:

— controls over software modification, duplication and distribution, with particular emphasis on access and integrity controls;

— audit trails of authorizations and of changes made to IT assets;

— controls over licensing, underlicensing, overlicensing, and compliance with licensing terms and conditions;

— controls over situations involving mixed ownership and responsibilities, such as in cloud computing and with 'Bring-Your-Own-Device' (BYOD) practices; and

— reconciliation of IT asset management data with data in other information systems when justified by business value, in particular with financial information systems recording assets and expenses.

Furthermore, because information associated with IT assets is typically voluminous, highly complex and fast-changing, it is likely that organizations with such information will need to make use of automated information systems.

Another difference between ISO 55001:2014 and this document is that this document provides optionally for multiple explicit groupings of process objectives (or 'tiers'). The most important of these is the basic tier called 'trustworthy data', which is the most important to most end-user organizations and also software publishers. Tier two is for 'life cycle integration', and tier three is for 'optimization'. More information about the tiers and their respective groupings of objectives is given in Annex B.

Since major physical assets increasingly incorporate or depend on software, it is likely that the additional requirements of this document will be relevant in such situations. It is likely that most organizations with major physical assets will need management systems meeting a mixture of 'pure' ISO 55001:2014 requirements and also of the additional requirements from this document.

IT assets encompass a wide variety of asset types. Figure 1 indicates the principal IT asset types diagrammatically.

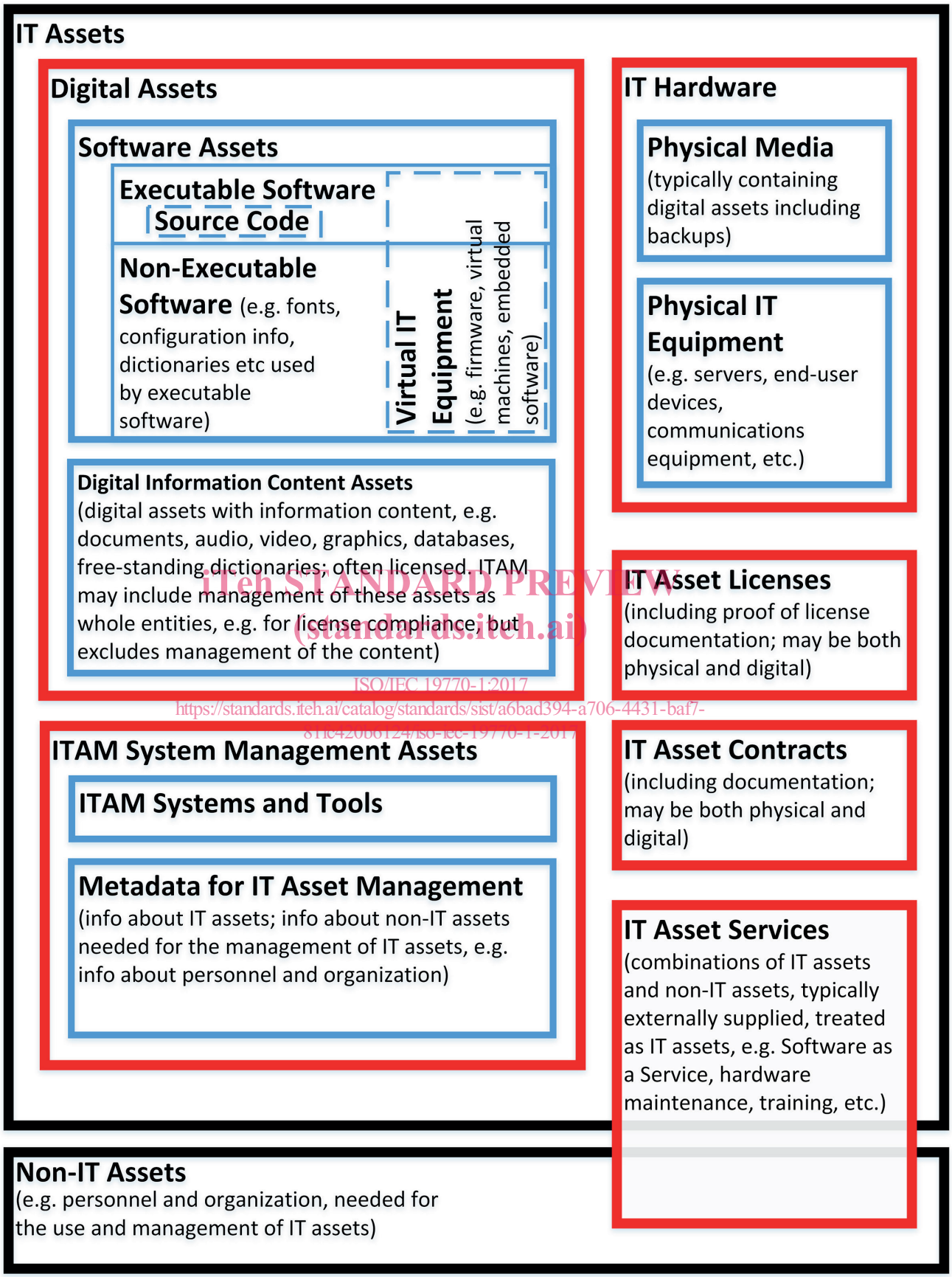

Figure 1 — Principal types of IT assets

This document can be used by any organization and can be applied to all types of IT assets. The organization determines to which of its IT assets this document applies.

This document is primarily intended for use by:

— those involved in the establishment, implementation, maintenance, and improvement of an IT asset management system;

— those involved in delivering IT asset management activities, including service providers;

— internal and external parties to assess the organization's ability to meet legal, regulatory and contractual requirements and the organization's own requirements.

The order in which requirements are presented in this document does not reflect their importance or imply the order in which they are to be implemented.

Further guidance regarding the application of the requirements within this document shared with ISO 55001:2014 is provided in ISO 55002.

General information on asset management and on IT asset management, and information on the terminology applicable to this document, is provided in ISO 55000 and in ISO/IEC 19770-5. Organizations can find that these documents will assist in the development of IT asset management in their organization.

This document applies the definition of "risk" given in ISO 31000:2009 and ISO/IEC Guide 73:2009. In addition, it uses the term "stakeholder" rather than "interested party".

This document is designed to enable an organization to align and integrate its IT asset management system with related management system requirements, for example those specified by ISO/IEC 27001 and ISO/IEC 20000-1.

This document is not intended to be in conflict with any organization's policies, procedures and standards. Any such conflict should be resolved before using this document.

Information technology — IT asset management —

Part 1: IT asset management systems — Requirements

1 Scope

1.1 Purpose

This document specifies requirements for an IT asset management system within the context of the organization.

This document can be applied to all types of IT assets and by all types and sizes of organizations.

NOTE 1 This document is intended to be used for managing IT assets in particular, but it can also be applied to other asset types. It can be suitable, in whole or in part, for managing embedded software and firmware, however its use for these purposes has not been determined. It is not intended for managing information assets per se, i.e. it is not intended for managing information as an asset independent of hardware and software assets. Certain types of data and information are covered, such as data and information about IT assets in scope, and depending on how the scope is defined, it can cover digital information content assets. See the Introduction for an explanation about IT assets.

NOTE 2 This document does not specify financial, accounting, or technical requirements for managing specific IT asset types.

NOTE 3 For the purposes of this document, the term "IT asset management system" is used to refer to a management system for IT asset management.

This document is a discipline-specific extension of ISO 55001:2014, with changes, and is not a sector-specific application of that International Standard. ISO 55001:2014 is intended to be used for managing physical assets in particular, but it can also be applied to other asset types. This document specifies requirements for the management of IT assets which are additional to those specified in ISO 55001:2014. Conformance to this document does not imply conformance to ISO 55001:2014.

This document can be used by internal and external parties to assess the organization's ability to meet the organization's own IT asset management requirements.

1.2 Field of application

This document applies to IT asset management processes and can be implemented by organizations to achieve immediate benefits.

This document can be applied to all IT assets. For example, it can be applied to not only IT hardware but also to executable software (such as application programs and operating systems) and non-executable software (such as fonts and configuration information). It can be applied to all technological environments and computing platforms (e.g. virtualized software applications, on-premises or software-as-a-service; it is equally relevant in cloud computing as it is in legacy computing environments).

1.3 Limitations

This document does not detail the IT asset management processes in terms of methods or procedures required to meet the requirements for outcomes of a process.

This document does not specify the sequence of steps an organization should follow to implement IT asset management.

This document does not detail documentation in terms of name, format, explicit content and recording media.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

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

Some of these terms are repeated from ISO 55000:2014, and refer to assets in general. These terms are usable for IT assets when used in the context of IT asset management, with 'asset' being understood as referring to 'IT asset'. In some cases, terms specific to IT assets have been added. No specific interpretation is intended based on whether an IT-specific term has been defined or not.

3.1
asset
item, thing or entity that has potential or actual value to an *organization* (3.38)

Note 1 to entry: Value can be tangible or intangible, financial or non-financial, and includes consideration of *risks* (3.48) and liabilities. It can be positive or negative at different stages of the *asset life* (3.2).

Note 2 to entry: Physical assets usually refer to equipment, inventory and properties owned by the organization. Physical assets are the opposite of intangible assets, which are non-physical assets such as leases, brands, digital assets, use rights, licences, intellectual property rights, reputation or agreements.

Note 3 to entry: A grouping of assets referred to as an *asset system* (3.7) could also be considered as an asset.

[SOURCE: ISO 55000:2014, 3.2.1]

3.2
asset life
period from *asset* (3.1) creation to asset end-of-life

[SOURCE: ISO 55000:2014, 3.2.2]

3.3
asset management
coordinated activity of an *organization* (3.38) to realize value from *assets* (3.1)

Note 1 to entry: Realization of value will normally involve a balancing of costs, *risks* (3.48), opportunities and *performance* (3.42) benefits.

Note 2 to entry: Activity can also refer to the application of the elements of the *asset management system* (3.5).

Note 3 to entry: The term "activity" has a broad meaning and can include, for example, the approach, the planning, the plans and their implementation.

[SOURCE: ISO 55000:2014, 3.3.1]

3.4
asset management plan
documented information (3.19) that specifies the activities, resources and timescales required for an individual *asset* (3.1), or a grouping of assets, to achieve the *organization's* (3.38) *asset management* (3.3) *objectives* (3.37)

Note 1 to entry: The grouping of assets may be by *asset type* (3.8), asset class, *asset system* (3.7) or *asset portfolio* (3.6).

Note 2 to entry: An asset management plan is derived from the *strategic asset management plan* (3.53).

Note 3 to entry: An asset management plan may be contained in, or may be a subsidiary plan of, the strategic asset management plan.

[SOURCE: ISO 55000:2014, 3.3.3]

3.5
asset management system
management system (3.33) for *asset management* (3.3) whose function is to establish the asset management *policy* (3.43) and asset management *objectives* (3.37)

Note 1 to entry: The asset management system is a subset of asset management.

[SOURCE: ISO 55000:2014, 3.4.3]

3.6
asset portfolio
assets (3.1) that are within the scope of the *asset management system* (3.5)

Note 1 to entry: A portfolio is typically established and assigned for managerial control purposes. Portfolios for physical hardware might be defined by category (e.g. plant, equipment, tools, land). Software portfolios might be defined by software publisher, or by platform (e.g. PC, server, mainframe).

Note 2 to entry: An asset management system can encompass multiple asset portfolios. Where multiple asset portfolios and asset management systems are employed, *asset management* (3.3) activities should be coordinated between the portfolios and systems.

[SOURCE: ISO 55000:2014, 3.2.4]

3.7
asset system
set of *assets* (3.1) that interact or are interrelated

[SOURCE: ISO 55000:2014, 3.2.5]

3.8
asset type
grouping of *assets* (3.1) having common characteristics that distinguish those assets as a group or class

EXAMPLE Physical assets, information assets, intangible assets, *critical assets* (3.15), enabling assets, linear assets, information and communications technology (ICT) assets, infrastructure assets, moveable assets.

[SOURCE: ISO 55000:2014, 3.2.6]

3.9
audit
systematic, independent and documented *process* (3.46) for obtaining audit evidence and evaluating it objectively to determine the extent to which the audit criteria are fulfilled

Note 1 to entry: An audit can be an internal audit (first party) or an external audit (second party or third party), and it can be a combined or integrated audit (combining two or more disciplines).

Note 2 to entry: An internal audit is conducted by the organization itself, or by an external party on its behalf.

Note 3 to entry: “Audit evidence” and “audit criteria” are defined in ISO 19011.

[SOURCE: ISO 55000:2014, 3.1.1, modified — Note 2 to entry has been added for conformance with Annex SL]

3.10
capability
<asset management> measure of capacity and the ability of an entity (system, person or *organization* (3.38)) to achieve its *objectives* (3.37)

Note 1 to entry: *Asset management* (3.3) capabilities include *processes* (3.46), resources, *competences* (3.11) and technologies to enable the effective and efficient development and delivery of *asset management plans* (3.4) and *asset life* (3.2) activities, and their *continual improvement* (3.13).

[SOURCE: ISO 55000:2014, 3.1.2]

3.11
competence
ability to apply knowledge and skills to achieve intended results

[SOURCE: ISO 55000:2014, 3.1.3]

3.12
conformity
fulfilment of a *requirement* (3.47)

[SOURCE: ISO 55000:2014, 3.1.4]

3.13
continual improvement
recurring activity to enhance *performance* (3.42)

[SOURCE: ISO 55000:2014, 3.1.5]

3.14
corrective action
action to eliminate the cause of a *nonconformity* (3.36) and to prevent recurrence

Note 1 to entry: In the case of other undesirable outcomes, action is necessary to minimize or eliminate the causes and to reduce the impact or prevent recurrence. Such actions fall outside the concept of corrective action, in the sense of this definition.

[SOURCE: ISO 55000:2014, 3.4.1]

3.15
critical asset
asset (3.1) having potential to significantly impact on the achievement of the *organization's* (3.38) *objectives* (3.37)

Note 1 to entry: Assets can be safety-critical, environment-critical or *performance-critical* (3.42) and can relate to legal, regulatory or statutory *requirements* (3.47).

Note 2 to entry: Critical assets can refer to those assets necessary to provide services to critical customers.

Note 3 to entry: *Asset systems* (3.7) can be distinguished as being critical in a similar manner to individual assets.

[SOURCE: ISO 55000:2014, 3.2.7]

3.16
data
facts about an object

Note 1 to entry: In the context of *IT asset management systems* (3.28), data may be a captured, measured or recorded representation of information, before it is analysed, interpreted or processed. Data may relate to objects such as facts, events, things, processes, or ideas, including concepts that within a certain context have a particular meaning related to IT assets.

[SOURCE: ISO 9000:2015, 3.8.1, modified — Note 1 has been added, modified from ISO 15784-1 and ISO/IEC 2382]

3.17
digital asset
IT asset (3.25) expressed electronically in a digital format

Note 1 to entry: Digital assets include *software assets* (3.50), and *digital information content assets* (3.18).

3.18
digital information content asset
digital asset (3.17) with information content

EXAMPLE Documents, audio, video, graphics, databases, free-standing dictionaries; often licensed.

Note 1 to entry: ITAM can include management of these assets as whole entities, e.g. for license compliance, but excludes management of the content.

3.19
documented information
information required to be controlled and maintained by an *organization* (3.38) and the medium on which it is contained

Note 1 to entry: Documented information can be in any format and media and from any source.

Note 2 to entry: Documented information can refer to:

— the *management system* (3.33), including related *processes* (3.46);

— information created in order for the organization to operate (documentation);

— evidence of results achieved (e.g. records, key performance indicators).

[SOURCE: ISO 55000:2014, 3.1.6]

3.20
effectiveness
extent to which planned activities are realized and planned results achieved

[SOURCE: ISO 55000:2014, 3.1.7]

3.21
hardware
physical equipment used to process, store, or transmit computer programs or data

[SOURCE: ISO/IEC/IEEE 24765:2010, 3.1278]

3.22
incident
unplanned event or occurrence resulting in damage or other loss

[SOURCE: ISO 55000:2014, 3.1.8]