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Gestion d'actifs - Systèmes de management - Lignes directrices relatives à l'application de l'ISO 55001

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Second edition
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Asset management — Management systems — Guidelines for the application of ISO 55001

Gestion d'actifs — Systèmes de management — Lignes directrices relatives à l'application de l'ISO 55001

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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 ISO documents 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 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 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.

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This document was prepared by Technical Committee ISO/TC 251, *Asset management*.

This second edition cancels and replaces the first edition (ISO 55002:2014), which has been technically revised to improve the guidance on the development and application of an asset management system.

The following changes have been made:

— the ISO 55000 "fundamentals" (value, alignment, leadership and assurance) have been addressed in each clause, whenever applicable, stating the contribution of the requirements specified in ISO 55001 to achieving the fundamentals;

— the application of the requirements of ISO 55001 to the domains of asset management identified in ISO 55000 (see ISO 55000:2014, Figure 1) have been clarified, i.e. to the asset portfolio, to the asset management system and to asset management, stating the adequacy of the requirements to each domain, whenever applicable;

— linkages between clauses have been provided, by stating the relevant interconnections (e.g. "see 6.2.1");

— annexes have been added on cross cutting concepts, present in the main text of this document to provide a combined guidance for specific themes in asset management that were identified as being addressed in several clauses.

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.

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Introduction

0.1 General

This document provides guidance for the application of a management system for asset management, referred to as an "asset management system", in accordance with the requirements of ISO 55001.

This document provides explanatory text intended to clarify the requirements specified in ISO 55001 and provides examples to support implementation of these requirements. It does not provide guidance for managing specific asset types.

This document provides guidance for use by:

a) those involved in the establishment, implementation, operation, maintenance and improvement of an asset management system;

b) those involved in delivering asset management activities, including service providers.

General information on asset management, and information on the terminology applicable to this document, is provided in ISO 55000.

0.2 Assets, asset management and the asset management system

An asset is something that has potential or actual value to an organization. Asset management enables an organization to realize value from assets in the achievement of its organizational objectives. An asset management system is used by the organization to direct, coordinate and control asset management activities.

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NOTE An asset management system can be established by any organization, which can be a sole-trader, company, corporation, firm, enterprise, authority, partnership, charity or institution, or part or combination thereof, whether incorporated or not, public or private. The organization, for example, can be an asset owner, custodian, operator, service provider, subsidiary, alliance or joint venture.

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The asset management system, asset management and the asset portfolio should be aligned to, and support delivery of, the organizational objectives and the organizational plan.

Organizational objectives are generally developed as part of the organization's strategic level planning activities and are given in documented information within an organizational plan. The organizational objectives form a key part of the context of the asset management system and are the starting point for establishing the asset management objectives.

Understanding the context of the organization enables the organization to design, implement and maintain its asset management system, asset management and the assets, in alignment with the purpose of the organization, its objectives and its stakeholder needs and requirements.

The asset management system includes:

a) the asset management policy (see 5.2);

b) the asset management objectives (see 6.2);

c) the strategic asset management plan (SAMP);

d) the asset management plan(s) (see 6.2.2);

e) supporting activities (see Clause 7);

f) operational planning and control (see Clause 8), including the processes and procedures employed to manage assets in the asset portfolio throughout their life cycle;

g) performance evaluation (see Clause 9);

h) improvement activities (see Clause 10);

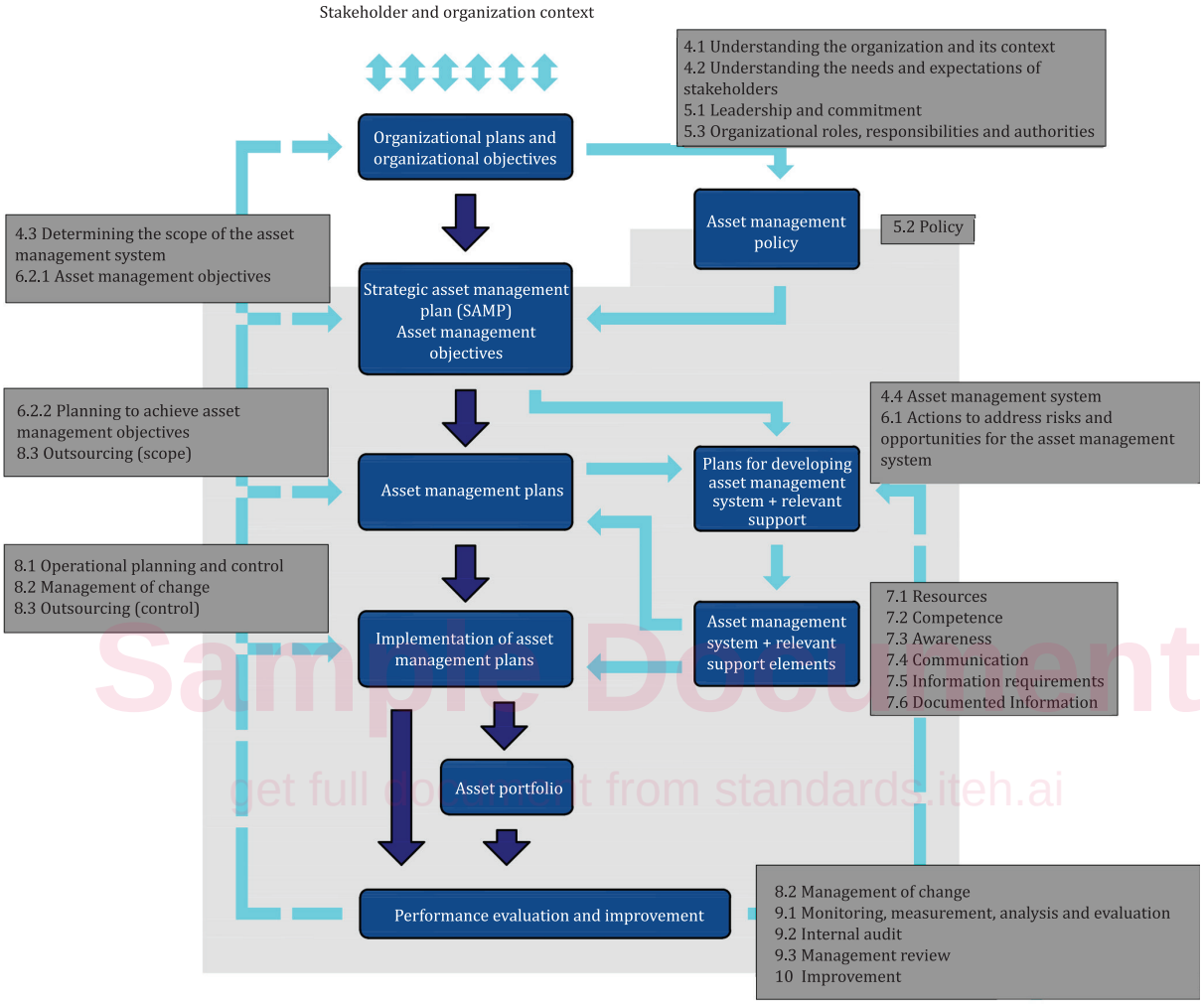
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i) guidance on how it relates to or interfaces with other relevant policies and processes and management systems.

Figure 1 shows the relationship between the key elements of an asset management system, together with the related clauses in ISO 55001.



NOTE 1 Only the primary connections are shown to avoid over-complexity.

NOTE 2 This does not aim to repeat the distinction between asset management and an asset management system: it is a connections view showing directions of influence.

NOTE 3 The grey highlighted box designates the boundary of the asset management system.

Figure 1 — Relationship between key elements of an asset management system

0.3 Structure of this document

This document provides guidance on the implementation of the requirements for an asset management system specified in ISO 55001. By doing so, this document follows a similar structure and sequence of clauses and subclauses as in ISO 55001 (the subclauses in Clause 6 and Clause 10 are not in strict alignment). Throughout this document distinction is made, where relevant, between assets and asset portfolio, asset management and the asset management system. In ISO 55000:2014, 2.4.3, the relationship between these three concepts is clarified. An asset management system is used by the organization to direct, coordinate and control asset management activities to realize value from its assets for the organization and for its stakeholders. When applying ISO 55001, it is relevant to be aware of this relationship. An organization should, for example, distinguish between monitoring and

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evaluating the performance of its asset portfolio, its asset management and its asset management system and the use of results of these different types of monitoring and evaluation in the processes for continual improvement at various levels. Where relevant, this document details how an organization should distinguish between assets and asset portfolio, asset management and the asset management system to ensure that the application of ISO 55001 promotes realization of value from its asset portfolio.

In addition, this document also addresses several subjects that are relevant for the effective implementation of asset management, but that are not related to one specific (sub)clause of ISO 55001.

Asset management is the coordinated activity of an organization to realize value from assets (see the definition in ISO 55000:2014, 3.3.1) and although the requirements in ISO 55001 cover the overall approach of comprehensive asset management, there are elements that are linked to several clauses. As special care should be given to the alignment of these cross-cutting elements, these subjects are addressed in annexes to this document.

In the design and improvement of the asset management system and execution of asset management, four pathways are of key importance:

— the line of sight from context of the organization to asset management policy to the SAMP to asset management plans to operation;

— objectives, derived from the organizational objectives to strategic asset management objectives, to asset management objectives; these are often translated into a hierarchy of key performance indicators;

— decision-making criteria and decision-making processes;

— risk management is developed at all levels, from the top level in the organization (down) to daily operations; the risk management framework is aligned with the design and improvement of the asset management system and the risk management process with the asset management execution.

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The concurrence of these four elements is one of the key aspects of asset management. In particular, the alignment of decision making and setting of objectives is not straightforward. These are developed together and can need several iterations before they are fully aligned and mature.

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To support this overall alignment, Annexes A to H provide information on:

a) the concept of value as a fundamental in asset management (Annex A);

b) defining the scope of an asset management system (Annex B);

c) the objectives and structure of the SAMP (Annex C);

d) the principles behind asset management decision making (Annex D);

e) addressing risk management in asset management (Annex E);

f) the relationship between the financial and non-financial functions in asset management (Annex F);

g) scalability of asset management systems for varying organization sizes and complexity (Annex G);

h) information on asset management activities (Annex H).

0.4 Language applied in this document

In this document, the following verbal forms are used:

— “shall” indicates a requirement;

— “should” indicates a recommendation;

— “may” indicates a permission;

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— “can” indicates a possibility or a capability.

Information marked as “NOTE” is for guidance in understanding or clarifying the associated text.

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Asset management — Management systems — Guidelines for the application of ISO 55001

1 Scope

This document gives guidelines for the application of an asset management system, in accordance with the requirements of ISO 55001.

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

NOTE 1 This document is intended to be used for managing physical assets in particular, but it can also be applied to other asset types.

NOTE 2 This document does not provide financial, accounting or technical guidance for managing specific asset types, however, in Annex F information is provided on the relationship between the financial and non-financial asset management functions.

NOTE 3 For the purposes of ISO 55000, ISO 55001 and this document, the term "asset management system" is used to refer to a management system for asset management.

2 Normative references

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The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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ISO 55000:2014, *Asset management — Overview, principles and terminology*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 55000 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/

4 Context of the organization

4.1 Understanding the organization and its context

4.1.1 General

When establishing or reviewing an asset management system, it is important to ensure that its design, scope and implementation are consistent and aligned with the external and internal context of the organization.

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4.1.2 External context

Understanding the organization's external context can include, but is not limited to, consideration of the following:

a) the social and cultural, political, legal, regulatory, financial, technological, economic, competitive and natural environment factors, whether international, national, regional or local;

b) key drivers and trends in factors that are identified as potentially having an impact on the objectives of the organization;

c) relationships with, and perceptions and values of, external stakeholders.

NOTE "Stakeholder" can also be referred to as an "interested party".

4.1.3 Internal context

Understanding the organization's internal context can include, but is not limited to, consideration of the following:

a) governance requirements;

b) policies, objectives and the strategies that are in place to achieve them;

c) the organization's culture and values;

d) organizational structure, roles, accountabilities and authorities;

e) the size and complexity of the organization;

f) capabilities, understood in terms of resources and knowledge (e.g. capital, time, people, systems and technologies);

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g) information systems, information flows and decision-making processes (both formal and informal);

h) standards, guidelines and models adopted by the organization;

i) relationships with, and perceptions and values of, internal stakeholders;

j) the form and extent of contractual relationships;

k) the organization's risk management plans including tolerance limits, risk attitude and capacity;

l) asset management practices and other management systems, plans, process(es) and procedure(s);

m) integrity and performance of the assets and asset systems, and the outputs of consequent evaluations or reviews;

n) the size, complexity and criticality of the assets;

o) feedback from the investigation of previous asset and asset system failures, incidents, accidents and emergencies, and any systemic or statistical analyses and evaluations;

p) assessments of the ability of the asset management system to achieve the intended outcomes of the organizational objectives;

q) feedback from previous self-assessments, internal audits, third party and certification reviews.

At the strategic level, tools such as Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis and Political, Economic, Social, Technological, Legal, Environmental (PESTLE) analysis may be used for identification and evaluation of contextual issues. A simpler approach, such as brainstorming, can be useful for organizations, depending on the size and complexity of their operations.

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The processes and associated outputs used for evaluating the organization's context can be considered necessary for the effectiveness of the asset management system, and may, therefore, be maintained as documented information (see ISO 55001:2014, 7.6.1). The triggers and review frequency for conducting these processes should also be defined in documented information.

4.2 Understanding the needs and expectations of stakeholders

4.2.1 General

The organization should identify and review the stakeholders that are relevant to the asset management system, asset management and the assets, and the needs and expectations of these stakeholders. The identification and review of the stakeholders' needs and expectations will enable the identification of the value the stakeholders could receive from the organization's assets (see Annex A for a discussion on the concept of value in asset management).

4.2.2 Internal stakeholders

Internal stakeholders can include the following:

a) employees of the organization;

b) groups within the organization, i.e. functional groups (e.g. engineering, finance, accounting, maintenance, operations, purchasing, receiving, logistics, communications and information management) or other groups (e.g. safety representatives);

c) shareholders, management consortiums, owners.

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4.2.3 External stakeholders

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External stakeholders can include the following:

a) customers, users;

b) suppliers, service providers and contractors;

c) non-governmental organizations, including civil society organizations, consumer organizations and the media with an interest in issues related to asset management;

d) government organizations, government agencies, regulatory authorities, and politicians at all levels of government;

e) taxpayers;

f) local communities;

g) those in society interested in social, financial, environmental or other forms of sustainability;

h) investors, financial institutions, rating agencies, brokers and insurers;

i) external employee representatives (e.g. an employee of an industry body/union).

4.2.4 Stakeholder needs and expectations

Stakeholders' needs and expectations should be defined in documented information and be communicated. This may be captured in a high-level statement of stakeholder needs within the SAMP, recognizing that more detailed statements will follow in the asset management plans to specifically address the expectations of different stakeholder groups. These statements should reference any mandatory requirements.

The organization should consider a means of tracking how current the information collected is, and the methods involved for its collection. When engaging with stakeholders to determine their needs

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