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~~ISO JTC1/SC32/AVG6/IEC ITC 1/SC 32~~

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Foreword

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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 or www.iec.ch/members_experts/refdocs).

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This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 32, *Data management and interchange*.

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 and www.iec.ch/national-committees.

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Introduction

This document is a high level, principles-based advisory International Standard. It sets out a framework of two elements with the relevant concepts, that can be referenced by organizations, persons and systems that use data. The framework and concepts outlined in this standard should be read in conjunction with the terms and definitions contained in ISO/IEC 5207⁺.

Organizations of all types (including commercial enterprises, government agencies, not-for-profit organizations), sizes and purposes depend on the use of data for day-to-day business operations and are increasingly reliant on data dependent systems such as information technology management, cloud computing, big data, Internet of Things, and artificial intelligence.

There are numerous approaches to data usage, from the most complex which includes highly sensitive, personal or confidential information to the least sophisticated data capture systems. Within each data usage scenario, there are different approaches to system integrity, data quality, data user capabilities, and organizational governance.

This document has been prepared using a principles-based approach to encourage organizations to implement data governance to manage risks at each stage of data use, exchange or sharing. This approach supports organizations seeking greater value, knowledge and insights from data while providing a framework for data users. As data are essential to a broad range of roles within an organization, it is imperative that all users have a fundamental understanding of data use to ensure appropriate data management. There is a risk that as the use of data is ubiquitous within organizations, users without appropriate knowledge, context and expertise can inadvertently lead to incorrect data usage.

The sharing or exchange of data can involve multiple individuals, systems or organizations with different processes and procedures. Furthermore, each entity involved in the sharing or exchange of data can have different approaches to security, privacy, data sensitivity or legal considerations. While data usage activities can be managed under different governance arrangements such as a formal contract or data sharing agreement, there are many steps involved in data usage that may not be formalized. This document uses a risk identification and management methodology which can be considered by any data user, be they an individual or organization. There can be an advantage for organizations operating with existing data or technology governance processes such as those outlined in International Standards related to the governance of information technology such as ISO/IEC 38500 or ISO/IEC 38505.

In addition, organizations can consider the suitability of IT systems, security and storage requirements to support governance capabilities which are addressed within ISO/IEC 27001, ISO/IEC 27701 and ISO/IEC 27040.

⁺ISO/IEC 5207:2023 Information technology – Data usage – Terminology and use cases

Information technology — Data usage — Guidance for data usage

1 Scope

This document provides high-level guidance to data users, whether organizations or individuals, to assist in realizing the benefits from data usage while managing risks.

2 Normative references

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

ISO/IEC 5207, *Information technology — Data usage — Terminology and use cases*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 5207 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 <https://www.electropedia.org/> <https://www.electropedia.org/>

4 Abbreviated terms

~~DLO~~ — data level objective

~~DQO~~ — data quality objective

~~DSA~~ — data sharing agreement

~~IoT~~ — internet of things

~~PII~~ — personally identifiable information

~~SLA~~ — service level agreement

~~SLO~~ — service level objective

DLO data level objective

DQO data quality objective

DSA data sharing agreement

IoT internet of things

PII personally identifiable information

SLA service level agreement

SLO service level objective

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5 Introduction to data usage

5.1 Overview

5.1.1 The context of data usage

Data usage is any activity involving data. This includes the use, sharing and exchange of data that can occur across entities of all types, sizes, and purposes. The decision-making process around data usage requires the identification of:

- the decision to use, exchange or share data;
- the purpose for data use, exchange or sharing;
- details about the data itself including its characteristics, quality, security, and privacy;
- pathways to use, share and exchange data and the alternatives;
- acceptable risks in using, sharing, or exchanging data;
- mitigation measures for risks;
- authorization steps required;
- the policies, processes, procedures, or instruments required to provide predictability and reliability around data usage activities.

Identifying these characteristics can be complex particularly when data use is ubiquitous in an organization, or when there are multiple parties, or informal data sharing arrangements. This document proposes two perspectives to assist organizations to identify and mitigate data project risks and opportunities being:

- a) the **data process** within the organization or between or among organizations or entities when sharing or exchanging data, using the data lifecycle as a framework;
- b) the **data environment** to assess the surroundings or conditions which can be consequential.

These two elements are the core components in developing a *data usage framework* which provides the structure for organizations to understand the characteristics of any entity in possession of the data. Each component within the data usage framework should be captured within the *metadata* description. Understanding the data process, the data environment and developing a data usage framework can assist organizations with benefits including:

- identifying risks to the data management process and opportunities for corrective actions;
- identifying opportunities to standardize identical *data processes*;
- increasing value capture from data through improved usage practices;
- ensuring that all entities have a common understanding of the data through well documented metadata.

5.1.2 Data process

The *data process* can be assessed using the *data lifecycle* as a framework to identify the steps involved in *data usage*. This can assist organizations in better understanding their *data processes* and identify areas

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