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Information technology — Artificial intelligence — Data life cycle framework

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Foreword

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Introduction

Artificial intelligence (AI) systems are being adopted by organizations of all types, sizes and purposes. Data are essential to the development and operation of AI systems.

In the field of AI systems, there are many data life cycles in use and under consideration for different purposes (e.g. data quality, bias in data, data governance, development and use of AI systems). Without an overarching framework, these different data life cycles can be challenging to correctly interpret by those without previous knowledge, context and expertise. There is a risk that these multiple data life cycles will not be applied as intended.

This document provides a data life cycle overview in Clause 5, describes a data life cycle framework in Clause 6 and provides more information on the stages or processes of the data life cycle in Clause 7.

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Information technology — Artificial intelligence — Data life cycle framework

1 Scope

This document defines the stages and identifies associated actions for data processing throughout the artificial intelligence (AI) system life cycle, including acquisition, creation, development, deployment, maintenance and decommissioning. This document does not define specific services, platforms or tools. This document is applicable to all organizations, regardless of type, size or nature, that use data in the development and use of AI systems.

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 22989, *Information technology — Artificial intelligence — Artificial intelligence concepts and terminology*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 22989 apply.

ISO and IEC maintain terminology 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/

4 Symbols and abbreviated terms

AI	artificial intelligence
DPIA	data protection impact assessment
JSON	JavaScript object notation
ML	machine learning
OWL	web ontology language
PII	personally identifiable information
XML	extensible markup language

5 Data life cycle overview

The data life cycle for AI systems encompasses the processing of data from the earliest conception of a new AI system to the eventual decommissioning of the system and is separated into a number of distinct stages. Each stage will often, but not always, be part of a data life cycle for an AI system.

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