
Information technology — Artificial intelligence (AI) — Use cases

Technologies de l'information — Intelligence artificielle (IA) — Cas pratiques



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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.

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Introduction

This document provides a collection of use cases of artificial intelligence (AI) applications in a variety of domains.

In total, 132 AI use cases were submitted by experts between July 2018 and the end of November 2019. In this document, the term “use cases” means “collection of submitted use cases”.

The rationale for this document is as follows:

- illustrating the applicability of the AI standardization work across a variety of application domains;
- input to and reference for AI standardization work;
- sharing the collected use cases in support of AI standardization work with external organizations and internal entities to foster collaboration;
- reach out to new stakeholders interested in AI applicability;
- establishment of liaison organizations to collect requirements for AI via use cases;
- by investigating use cases, it is possible to find the new technical requirements (standardized demand) from the market, accelerating the transformation of science and technology achievements.

While a bottom-up approach was used to collect use cases, a top-down approach is used in this document to identify AI applications, and their deployment models, and their application domains., which is shown in [Clause 5](#).

The first step taken to collect use cases was to identify application domains of AI systems (described in [Clause 5](#)) and to provide a use case template (described in [6.4](#) and [Annex B](#)). Contributors were requested to submit use cases using the provided template.

For improving the quality of use cases, a guidance was provided for contributors. The guidance included identified acceptable sources (described in [6.3](#)) and AI characteristics (described in [6.4](#)) for preparing use cases.

In this document, [subclause 6.5](#) includes basic statistics of use cases. [Subclause 6.6](#) and [Annex C](#) describe the findings from use case analysis.

The use cases were grouped and categorized according to the identified application domains. In this document, use cases are summarized and grouped according to the application domains in [Clause 7](#). Readers of this document can find use cases of specific application domains and their original submissions at <https://standards.iso.org/iso-iec/tr/24030/ed-1/en>.

AI is an emerging field with use cases and solutions with a wide range of maturity and success. The descriptions are given for the convenience of users of this document and does not constitute an endorsement by ISO.

Information technology — Artificial intelligence (AI) — Use cases

1 Scope

This document provides a collection of representative use cases of AI applications in a variety of domains.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and 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 artificial intelligence AI

<system> capability to acquire, process, create and apply knowledge, held in the form of a model, to conduct one or more given tasks

3.2 artificial intelligence AI

<engineering discipline> discipline of developing and studying *artificial intelligence* (3.1)

3.3 quality

conformance to specified requirements

[SOURCE: ISO 13628-2:2006, 3.33]

3.4 machine learning

process using computational techniques to enable systems to learn from data or experience

3.5 deep learning

approach to creating rich hierarchical representations through the training of neural networks with many hidden layers

3.6 service

performance of activities, work, or duties

Note 1 to entry: A service is self-contained, coherent, discrete, and can be composed of other services.

Note 2 to entry: A service is generally an intangible product.