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Information technology — Artificial intelligence (AI) — AI system impact assessment

Technologies de l'information — Intelligence artificielle (IA) — Évaluation de l'impact des systèmes d'IA

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Contents

Page

Foreword ..... **v**

Introduction ..... **vi**

1 Scope **1**

2 Normative references **1**

3 Terms and definitions **1**

4 Abbreviated terms **2**

5 Developing and implementing an AI system impact assessment process **3**
5.1 General 3
5.2 Documenting the process 3
5.3 Integration with other organizational management processes 4
5.4 Timing of AI system impact assessment 4
5.5 Scope of the AI system impact assessment 5
5.6 Allocating responsibilities 5
5.7 Establishing thresholds for sensitive uses, restricted uses and impact scales 6
5.8 Performing the AI system impact assessment 7
5.9 Analysing the results of the AI system impact assessment 7
5.10 Recording and reporting 7
5.11 Approval process 8
5.12 Monitoring and review 8

6 Documenting the AI system impact assessment **9**
6.1 General 9
6.2 Scope of the AI system impact assessment 9
6.3 AI system information 9
6.3.1 AI system description 9
6.3.2 AI system functionalities and capabilities 10
6.3.3 AI system purpose 10
6.3.4 Intended uses 10
6.3.5 Unintended uses 10
6.4 Data information and quality 11
6.4.1 General 11
6.4.2 Data information 11
6.4.3 Data quality documentation 12
6.5 Algorithm and model information 12
6.5.1 General 12
6.5.2 Information on algorithms used by the organization 12
6.5.3 Information on algorithm development 13
6.5.4 Information on models used in an AI system 13
6.5.5 Information on model development 13
6.6 Deployment environment 14
6.6.1 Geographical area and languages 14
6.6.2 Deployment environment complexity and constraints 14
6.7 Relevant interested parties 15
6.7.1 General 15
6.7.2 Directly affected interested parties 15
6.7.3 Other relevant interested parties 15
6.8 Actual and reasonably foreseeable impacts 15
6.8.1 General 15
6.8.2 Benefits and harms 16
6.8.3 AI system failures and reasonably foreseeable misuse 19
6.9 Measures to address harms and benefits 19

Annex A (informative) **Guidance for use with ISO/IEC 42001** **21**

Annex B (informative) **Guidance for use with ISO/IEC 23894** **23**

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Annex C (informative) **Harms and benefits taxonomy** **25**
Annex D (informative) **Aligning AI system impact assessment with other assessments** **27**
Annex E (informative) **Example of an AI system impact assessment template** **31**
Bibliography **38**

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Foreword

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This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 42, *Artificial intelligence.*

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Introduction

The growing application of systems, products, services and components of such that incorporate some form of artificial intelligence (AI) has led to a growing concern about how AI systems can potentially impact all levels of society. AI brings with it the promise of great benefits: automation of difficult or dangerous jobs, faster and more accurate analysis of large sets of data, advances in healthcare etc. However, there are concerns about reasonably foreseeable negative effects of AI systems, including potentially harmful, unfair or discriminatory outcomes, environmental harm and unwanted reductions in workforce.

The development and use of seemingly benign AI systems can have the potential to significantly impact (both positively and negatively) individuals, groups of individuals and the society as a whole. To foster transparency and trustworthiness of systems using AI technologies, an organization developing and using these technologies can take actions to assure affected interested parties that these impacts have been appropriately considered. AI system impact assessments play an important role in the broader ecosystem of governance, risk and conformity assessment activities, which together can create a system of trust and accountability.

ISO/IEC 38507, ISO/IEC 23894 and ISO/IEC 42001 all form important pieces of this ecosystem, for governance, risk and conformity assessment (via a management system) respectively. Each of these highlights the need for consideration of impacts to individuals and societies. A governing body can understand these impacts to ensure that the development and use of AI systems align to company values and goals. An organization performing risk management activities can understand reasonably foreseeable impacts to individuals and societies to appropriately incorporate into their overall organizational risk assessment. An organization developing or using AI systems can incorporate understanding and documentation about these impacts into its management system to ensure that the AI systems in question meet expectations of relevant interested parties, as well as internal and external requirements.

The act of performing AI system impact assessments and utilizing their documented outcomes are integral to activities at all organizational levels to produce AI systems that are trustworthy and transparent. To this end, this document provides guidance for an organization on how to both implement a process for completing such assessments and promote a common understanding of the components necessary to produce an effective assessment.

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Information technology — Artificial intelligence (AI) — AI system impact assessment

1 Scope

This document provides guidance for organizations performing artificial intelligence (AI) system impact assessments for individuals and societies that can be affected by an AI system and its foreseeable applications. It includes considerations for how and when to perform such assessments and at what stages of the AI system life cycle, as well as guidance for AI system impact assessment documentation.

Additionally, this guidance includes how this AI system impact assessment process can be integrated into an organization's AI risk management and AI management system.

This document is intended for use by organizations developing, providing or using AI systems. This document is applicable to any organization, regardless of size, type and nature.

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*

ISO/IEC 23053, *Framework for Artificial Intelligence (AI) Systems Using Machine Learning (ML)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 22989, ISO/IEC 23053 and the following 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/

3.1
AI system impact assessment
formal, documented process by which the impacts to individuals, groups of individuals and societies are considered by an organization developing, providing, or using products or services utilizing artificial intelligence

3.2
intended use
use for which an AI system is designed

3.3
unintended use
use for which an AI system is not designed

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