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Information technology — Digital services ecodesign —

Part 1: Ecopractices for life cycle stages

Technologies de l'information — Écoconception des services numériques —

Partie 1: Écopratiques pour les étapes du cycle de vie

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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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This document was prepared by Technical Committee ISO/IEC JTC 1, *Information technology,* Subcommittee SC 39, *Sustainability, IT and data centres*.

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.

Introduction

The main purpose of this document is to set requirements and give recommendations on how an organization can ecodesign a digital service.

As the evidence of the consequences of human activity on the climate, the earth's resources and earth sanity become increasingly visible, it is important to reduce as much as possible the adverse environmental impacts of various products and services made by people.

Many publications demonstrate the consequences of digital services on the environment, such as greenhouse gas emissions, abiotic resources depletion and acidification. Studies on the impact of emails, video streaming, network usage, storage explosion, chatbots using large language models (LLM), to name a few, are numerous.

Examples of use cases of digital services include: searching for a trip on a train transportation system, booking a hotel ticket, paying an invoice online, booking an appointment, watching an online video, performing an administrative task. Those are mainly digital services with user interface, but digital services can also be backend or application programming interface (API) type services, invoked by others, like authorising a card payment or querying a reference database.

As far as digital services are concerned, based on today's knowledge on their adverse environmental impacts, it is possible to include, at the design, implementation, operation**,** maintenance and end-of-life stages, methodological, technical and measurement tools to limit those adverse impacts.

An increasing number of small and large organisations announce stances in favour of the UN Sustainable Development Goals (SDGs) and the will to reduce the adverse environmental impacts of their activities, including those induced by the digital services they provide to their users. Such companies are in need of requirements and recommendations identifying ways to reduce these digital services' adverse environmental impact.

The ecodesign approach (requirements, recommendations and indicators) ensures efficiency in the usage and consumption ratio. This can have a direct impact on the sobriety of consumption of resources (devices, networks, data centres).

By following ecodesign requirements and recommendations, lighter digital services tend to offer a better and faster user response. They also tend to allow broader access to users with old devices or operating systems or low bandwidth, or both. Lighter digital services will not compel users to prematurely change their devices for more powerful ones, therefore extending the lifespan of the devices they already possess.

This document is intended for people and entities involved in digital services and aims to be understood and used by the project teams of private and public organisations.

This document primarily targets digital service providers. However, organisations producing tools, methodologies, training and consulting can use this document to explain, help, train and advise their customers. Even though digital service end users (e.g. client, consumers) will not implement this document, they may, if interested, request information from digital service providers about a digital service, provided these are transparently disclosed.

Information technology — Digital services ecodesign —

Part 1:
Ecopractices for life cycle stages

1 Scope

This document is applicable to environmental matters for a digital service. It establishes requirements and recommendations applicable for requirements gathering, design, implementation, operations, maintenance and the end of life of digital services in order to minimise adverse environmental impacts during all stages of its life cycle. It also establishes a common language and understanding on this subject.

This document focuses on reducing the environmental impacts of a digital service. It therefore does not address all aspects of digital service design. For example, it does not address other aspects such as performance, resilience, reliability, availability or development language choice (see other standards covering these topics, e.g. ISO/IEC 25010 and ISO/IEC 27001).

This document does not include matters linked to other corporate social responsibility (CSR) topics, e.g. social, cultural, diversity, inclusion or exclusion.

This document is applicable to all development methodologies (waterfall, agile, etc.).

2 Normative references

There are no normative references in this document.

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