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**Robots and robotic devices – Ethical  
design and application of robots and  
robotic systems – Guide**

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## Summary of pages

This document comprises a front cover, an inside front cover, pages I to IV, pages 1 to 23, an inside back cover and a back cover.

# Foreword

## Publishing information

This British Standard is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 31 March 2023. It was prepared by Subcommittee AMT/10/1, *Ethics for robots and autonomous systems*, under the authority of Technical Committee AMT/10, *Robotics*. A list of organizations represented on these committees can be obtained on request to the committee manager.

## Supersession

This British Standard supersedes BS 8611:2016, which is withdrawn.

## Information about this document

This is a full revision of the standard, and introduces the following principal changes:

- the addition of new ethical hazards in [Table 1](#); and
- additional guidance on the application of the standard including a new flowchart for ethical risk assessment and management ([Figure 1](#)) and new guidance on ethical design parameters ([Table 2](#)).

This British Standard addresses issues in a field of technology that is rapidly changing and influencing society. Although efforts have been made to incorporate the anticipated effects of future developments in the standard, it is not possible for all future circumstances to have been considered or covered, for example non-embodied autonomous systems.

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As a guide, this British Standard takes the form of guidance and advisory recommendations. It is not to be quoted as if it were a specification or a code of practice.

It has been assumed in the preparation of this British Standard that the execution of its provisions will be entrusted to appropriately qualified and experienced people, for whose use it has been produced.

## Presentational conventions

The guidance in this document is presented in roman (i.e. upright) type. Any recommendations are expressed in sentences in which the principal auxiliary verb is “should”.

*Additional commentary, explanation and general informative material is presented in smaller italic type.*

Where words have alternative spellings, the preferred spelling of the Shorter Oxford English Dictionary is used (e.g. “organization” rather than “organisation”).

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**1 Scope**

This British Standard gives guidance on the identification of potential ethical harm and provides guidelines on the design control of robots through their whole lifecycle. It builds on existing safety requirements for different types of robots (e.g. industrial, personal care, service and medical).

This British Standard describes ethical hazards associated with robots and provides guidance to eliminate or reduce the risks associated with these ethical hazards. Significant ethical hazards are presented and guidance is given on how these hazards can be addressed for various robots, where possible.

Ethical hazards are broader than physical hazards; they additionally include psychological and social hazards (physical hazards imply ethical hazards and safety design features are part of ethical design). Safety elements are covered by safety standards; this British Standard is concerned with ethical elements.

This British Standard is primarily intended for use by designers and managers.

**2 Normative references**

The following documents are referred to in the text in such a way that some or all of their content constitutes provisions, or limits the application, of this document.<sup>1)</sup> For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

BS ISO 8373, *Robotics – Vocabulary*

**3 Terms and definitions**

For the purposes of this British Standard, the terms and definitions given in BS ISO 8373 and the following apply.

**3.1 autonomous system**

system which has the ability to perform intended tasks based on current state, knowledge and sensing, without human intervention

**3.2 ethical behaviour**

observance of/a measure to respect and care for the community of life, ecological integrity, social and cultural values, economic equity, non-violence and peace

**3.3 ethical harm**

anything likely to compromise psychological and/or societal and environmental well-being

*NOTE* Examples of ethical harm include stress, embarrassment, anxiety, addiction, discomfort, deception that induces negative consequences, humiliation, being disregarded, social isolation.

**3.4 ethical hazard**

potential source of ethical harm

**3.5 ethical risk**

probability of ethical harm occurring from the frequency and severity of exposure to a hazard

<sup>1)</sup> Documents that are referred to solely in an informative manner are listed in the Bibliography.