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BSI Standards Publication

Robotics — Application of ISO 13482

Part 2: Application guidelines

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National foreword

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A list of organizations represented on this committee can be obtained on request to its secretary.

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Part 2: Application guidelines

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 299, *Robotics*.

A list of all parts in the ISO 23482 series can be found on the ISO website.

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

ISO 13482 is the first safety standard developed for the area of service robots. It allows close human-robot interaction, including human-robot contact. Although ISO 13482 follows well-established principles and practices from standards for industrial robots and machines in general, additional guidance can facilitate its rapid and successful adoption by manufacturers and other stakeholders.

This document clarifies which robots fall under the definition of personal care robots and what distinguishes personal care robots from robots in other areas, such as medical robots or industrial robots. This document also provides further guidance on the risk assessment and risk reduction process to be conducted for a personal care robot. It contains examples of risk assessments for different types of personal care robots that can serve as an example for the user of ISO 13482 for their own risk assessment.

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TECHNICAL REPORT **ISO/TR 23482-2:2019**

Robotics — Application of ISO 13482 —

Part 2: Application guidelines

1 Scope

This document provides guidance on the use of ISO 13482 and is intended to facilitate the design of personal care robots in conformity with ISO 13482. Additional guidance is provided for users with limited experience of risk assessment and risk reduction. This document provides clarification and guidance on new terms and safety requirements introduced to allow close human-robot interaction and human-robot contact in personal care robot applications, including mobile servant robots, physical assistant robots and person carrier robots. This document considers the application of ISO 13482 to all service robots and includes related examples.

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 8373:2012, *Robots and robotic devices — Vocabulary*

ISO 13482:2014, *Robots and robotic devices — Safety requirements for personal care robots*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 8373:2012 and ISO 13482:2014 and the following 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
service robot
robot that performs useful tasks for humans or equipment excluding industrial automation applications

[SOURCE: ISO 8373:2012, 2.10, modified — Notes to entry have been deleted.]

3.2
personal care robot
service robot (3.1) that performs actions contributing directly towards improvement in the quality of life of humans, excluding medical applications

[SOURCE: ISO 13482:2014, 3.13, modified — Notes to entry have been deleted.]