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Robotics — Application services provided by service robots — Safety management systems requirements

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奥邦检验认证集团公示用途

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Foreword

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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 document 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).

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

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.

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Introduction

When operating service robots that coexist with people, proper management of their residual safety risks is needed. To achieve this, in the same manner as with general machineries, application service providers, who intended to start application services provided by service robots, need to consider the safety in operation as well as the robot system providers need to consider the safety in design. For application service providers to safely operate service robots with residual safety risks, communication between the robot system providers and the application service provider is important. For example, the robot system providers provide appropriate information for use when application service providers operate robots based on the comprehension of this information for use communicated by the robot system providers of the service robot. The application service providers then give feedback to the robot system providers on the safety-related information obtained from actual operation.

For some service robots, the design safety requirements have already been standardized in ISO 13482. There have been application service providers that operate robots within the scope of these standards. Although these application service providers have operated their application services safely, based on a certain level of knowledge and experience, their methodology has not yet been systematized, nor have the terms been standardized. It is considered that by systemizing and documenting an optimal methodology to operate application services provided by service robots safely, the criteria to be satisfied by new application service providers would be clarified which would then promote sound development of the industry.

The purpose of this document is to provide application service providers using service robots with the safety management system requirements for application services provided by service robots as a safe operating framework.

The safety management system for the application services provided by service robots is based on the concept of Plan-Do-Check-Act (PDCA). The PDCA model provides an iterative process used by organizations to achieve continual improvement. It can be briefly described as follows:

— Plan: establish safety objectives and processes necessary to deliver results in accordance with the organization's safety policy

— Do: implement the processes as planned.

— Check: monitor and measure processes against the safety policy, including its commitments, safety objectives and operating criteria, and report the results.

— Act: take actions to continually improve.

In this document, the following verbal forms are used:

— “shall” indicates a requirement;

— “should” indicates a recommendation;

— “may” indicates a permission;

— “can” indicates a possibility or a capability.

Information marked as “Note” is intended to assist the understanding or use of the document.

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前言

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本文件由技术委员会 ISO/TC 299，机器人技术制定。

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