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**Robotics — Performance criteria  
and related test methods for service  
robots —**

**Part 1:  
Locomotion for wheeled robots**

*Robotique — Critères de performance et méthodes d'essai  
correspondantes pour robots de service —*

*Partie 1: Locomotion des robots à roues*

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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](http://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](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on 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 the following URL: [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

The committee responsible for this document is Technical Committee ISO/TC 299, *Robotics*.

A list of all the parts in the ISO 18646 series can be found on the ISO website.

## Introduction

This document is intended to facilitate understanding of performance of wheeled robots between users and manufacturers. It defines the important performance characteristics, describes how they are specified and recommends how to test them.

The characteristics for which test methods are given in this document are those considered to affect robot performance significantly. Users of this document are intended to select the performance characteristics to be tested, in accordance with the specific requirements.

The performance criteria specified in this document are not intended to be interpreted as the verification or validation of safety requirements. This document deals with indoor environments only.

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# Robotics — Performance criteria and related test methods for service robots —

## Part 1: Locomotion for wheeled robots

### 1 Scope

This document describes methods for specifying and evaluating the locomotion performance of wheeled robots in indoor environments.

### 2 Normative references

There are no normative references in this document.

### 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <http://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

#### 3.1

##### **robot**

programmed actuated mechanism with a degree of autonomy, moving within its environment, to perform intended tasks

Note 1 to entry: A robot includes the control system and interface of the control system.

Note 2 to entry: The classification of robot into industrial robot or *service robot* (3.2) is done according to its intended application.

[SOURCE: ISO 8373:2012, 2.6, modified]

#### 3.2

##### **service robot**

*robot* (3.1) that performs useful tasks for humans or equipment excluding industrial automation applications

Note 1 to entry: Industrial automation applications include, but are not limited to, manufacturing, inspection, packaging, and assembly.

Note 2 to entry: While articulated robots used in production lines are industrial robots, similar articulated robots used for serving food are service robots.

[SOURCE: ISO 8373:2012, 2.10]