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GB/T 42830-2023

Mobile robots - Vocabulary

移动机器人 词汇

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1. Structure and Drafting Rules of Standardization Documents" Drafting. This document is equivalent to ISO 19649.2017 "Mobile Robot Vocabulary". This document has made the following minimal editorial changes.

---Modified the note on terminology

3.1.1 mobile robot, replacing ISO 8373.2012 with GB/T 12643-2013, and GB/T 12643-2013 is included in the reference list;

---Modified the note of terminology

3.5.5 Mobile Platform Coordinate System, replacing ISO 9787.2013 with GB/T 16977-2019, and GB/T 16977-2019 is included in the reference literature. Please note that some content in this document may be subject to patents. The publisher of this document assumes no responsibility for identifying patents. This document is proposed by China Machinery Industry Federation. This document is under the jurisdiction of the National Robot Standardization Technical Committee (SAC/TC591). This document was drafted by: Beijing Machinery Industry Automation Research Institute Co., Ltd., Beijing Union University, Suzhou Collaborative Innovation Medical Robot Research Institute, Tsinghua University, Beijing University of Information Science and Technology, and Institute of Automation, Chinese Academy of Sciences. The main drafters of this document. Yang Shuping, Zou Ying, Sun Yuning, Pan Changyong, Huang Min, Wang Shuo, Zhao Mingquan, Tang Cong, Liu Ying.

As mobile robots increase in industrial and non-industrial applications, there is an increasing need to define mobile robot-related terms. GB/T 12643-2013 "Robots and Robot Equipment Glossary" defines basic terms related to robots, but does not fully define mobile robots. Robot-related terms. This document is based on GB/T 12643-2013 and further defines the terms of mobile platforms and mobile robots. Mobile Robot Vocabulary

1 Scope

GB/T 42830-2023 is the Chinese vocabulary of mobile robots, equivalent to ISO 19649. The field grew from several separate traditions - AGVs in warehouses, service robots in buildings, legged research platforms - each with its own words for the same things, and the terms that matter most are the ones that sound self-evident: what counts as autonomous rather than automatic, what a robot's pose, path and trajectory are, and how a differential drive differs from an omnidirectional one in what it can and cannot do. The standard defines the common terms of mobile robots, the terms of kinematic structure, the terms specific to wheeled robots and to legged robots, the motion terms and the navigation terms, with an informative annex of examples. It took effect on 1 March 2024.

This document defines the technical aspects related to mobile robots traveling on hard surfaces and operating in industrial and service robot applications. language. This document defines the terms used to describe mobility, locomotion, and other related navigation of mobile robots.

2 Normative reference documents

This document has no normative references.

3.1 Common terms related to mobile robots

3.1.1 mobile robot mobilerobot Mobile robot based on self-control.

Note. The mobile robot may be a mobile platform (3.1.2) with or without a manipulator. [Source: GB/T 12643-2013,2.13]

3.1.2 mobile platform mobile platform An assembly of all parts that enables the mobile robot (3.1.1) to move (3.1.10). Note

1.The mobile platform may include a chassis for supporting the load. Note

2.Due to possible confusion with the term "base", the term "mobile base" is not used to describe the mobile platform. [Source: GB/T 12643-2013,3.18]

3.1.3 mobilitymobility The ability of a mobile platform (3.1.2) to travel within its environment.

Note. Mobility may be used as an indicator, for example. omnidirectional moving mechanisms (3.3.6) usually have higher mobility than differential drive (3.3.7) wheeled

mechanisms. mobility.

3.1.4 steering Control the traveling direction of the mobile platform (3.1.2).

3.1.5 Configuration A set of displacement values for all joints of the robot shape that can be completely determined at any time. [Source: GB/T 12643-2013,3.5]

3.1.6 The specific configuration (3.1.5) of the mobile platform (3.1.2) as defined by the manufacturer.