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GB/T 47245-2026

General framework for intelligent robot control systems

机器人智能控制系统总体架构

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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. Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents. This document was proposed

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1 Scope

GB/T 47245-2026 is the Chinese national standard covering the architecture of a robot controller that perceives and decides rather than only executes - the layers from sensing through world model and planning to motion control, and the interfaces between them. First edition, in force since 1 September 2026. It was issued on 27 February 2026 and has been

in force since 1 September 2026, as a first edition. The document is under the responsibility of the China Machinery Industry Federation. This page is published from the official record of the 2026 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

This document outlines the overall architecture of a robot intelligent control system, specifying the hardware layer, operating system layer, and middleware layer. The logical architecture and main functions of the algorithm layer. This document applies to the design and planning of the overall architecture of robot intelligent control systems.

2 Normative references

This document has no normative references.

3 Terms, Definitions and Abbreviations

3.1 Terms and Definitions The following terms and definitions apply to this document.

3.1.1 It integrates sensing, decision-making, planning, and control functions, supporting the robot's autonomous perception, intelligent decision-making, and flexible task execution. Component system.

Note. It consists of a hardware layer, an operating system layer, a middleware layer, and an algorithm layer.

3.1.2 It possesses distributed environmental perception, data analysis, and control execution capabilities, enabling multimodal perception and decision-making based on real-time information, and achieving... Intelligent electronic devices or systems that provide intelligent response and control.

Note. The intelligent sensing and control unit consists of an integrated data computing module and an intelligent sensing and control adaptation module.

3.1.3 motion control unit Electronic devices or systems used to control parameters such as position, speed, and acceleration of moving mechanical parts.

3.2 Abbreviations The following abbreviations apply to this document. App. Application USB. Universal Serial Bus