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The interface of robot simulation development environment

机器人仿真开发环境接口

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Table of Contents

Foreword	III
1 Scope	1
2 Terms and definitions	1
3 Abbreviations	2
4 Robot simulation development environment	2
5 Simulation environment development interface	2
5.1 Model Construction Interface	2
5.1.1 Purpose	2
5.1.2 Model construction method	3
5.1.3 Simulation Object Model Description Format	3
5.1.4 Model Description Format General Requirements	3
5.2 Control algorithm interface	4
5.2.1 Purpose	4
5.2.2 Passing parameters	4
5.2.3 Calling the control algorithm	4
6 Semi - physical simulation interface	4
6.1 Overview	4
6.2 Hardware in the loop simulation interface	4
6.2.1 Simulation principle	4
6.2.2 Interface technology composition	5
6.3 Rapid control prototype simulation interface	5
6.3.1 Simulation principle	5
6.3.2 Interface technology composition	5
7 Man - machine interaction interface	5
7.1 Overview	5
7.2 3D scene	6
7.3 Scene editing window	6
7.4 Menu bar	6
7.5 Toolbar	7
7.6 Status bar	7
7.7 Simulation Player	7
Appendix A (informative) Simulation object model description file	8

Foreword

This standard is drafted in accordance with the rules given in GB/T 1.1-2009.

This standard is proposed by the China Machinery Industry Federation.

This standard is nationalized by the National Automation System and Integrated Standardization Technical Committee (SAC/TC159).

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Robot simulation development environment interface

1 Scope

This standard specifies the simulation environment in the robot simulation development environment development interface, semi-physical simulation interface and simulation environment human-computer interaction

Interface, and simulation environment interface classification and specific requirements.

This standard applies to robot hardware and software developers.

2 terms and definitions

The following terms and definitions apply to this document.

Robot simulation development environment robotsimulationdevelopmentmentvironment;

For the robot designers to provide graphical interface for the development of the robot under the software platform, the establishment of the actual robot performance

The simulation of the robot, so that the development of the robot does not rely on the actual robot to achieve offline programming to improve the efficiency of robot development, easy to robot

Real-time simulation of visualization.

Note: including a unified programming environment, a unified compiler execution environment, reusable component library, a complete debugging/simulation environment, a variety of robot hardware

Of the "drive" program support and common common function control components, such as computer vision technology, navigation technology and robot arm control.

2.2 User user

Robot simulation development environment for users.

2.3 Physical engine physicsengine

By calculating the real physical properties of the simulation object to calculate the movement, rotation and collision reflection of the technology, so that the entity's movement

Combined with the dynamics of the robot.

2.4 Rendering engine renderingengine

Can give the simulation object real simulation environment, and efficient display of clear picture visualization technology.

2.5 Simulation interface

Robot Simulation The development environment communicates with external modules for communication and data exchange.

2.6 Simulation entity

Used to build some of the basic elements of the simulation object in the simulation scene.

Note: such as cubes, capsules and spheres.

2.7 Simulation time

Simulate the running time.

2.8 Shared object sharedobjects/sharedlibraries

Binary files that can be shared by executables and other binary files are loaded into memory during program loading or execution.