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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 20720.2-2020

Replacing GB/T 20720.2-2006

**Enterprise-control system integration - Part 2: Objects and
attributes for enterprise-control system integration**

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Foreword

GB/T 20720 "Enterprise Control System Integration" is divided into five parts:

- Part 1: Model and terminology;
- Part 2: Objects and attributes of enterprise control system integration;
- Part 3: Manufacturing operation management activity model;
- Part 4: Objects and attributes of manufacturing operation management integration;
- Part 5: Business and manufacturing affairs:

This part is Part 2 of GB/T 20720:

This section was drafted in accordance with the rules given in GB/T 1:1-2009:

This part replaces GB/T 20720:2-2006 "Enterprise Control System Integration Part 2: Object Model Attributes", and GB/T 20720:2-

Compared with:2006, the main technical changes are as follows:

- Added the exchange information object model for manufacturing operation management activities, not just production operation management activities (see section Chapter 6);
- Modified the production specific object model (see Appendix A, Appendix A of the:2006 edition);
- Added the UML object model, making the object model and related attribute tables available in the same part (see 4:4);
- Added the definition of hierarchical scope objects to replace location attributes (see 4:7);
- Added a value type section to define the exchange of non-simple value types (see 4:8:5, 4:8:6, 4:8:7, 4:8:8);
- Added a simple value type, which is defined using ISO 15000-5 (see 4:8:3):

The translation method used in this part is equivalent to the adoption of IEC 62264-2:2013 "Enterprise Control System Integration Part 2: Enterprise Control System Integration"

Objects and Properties of ":

The Chinese documents that have a consistent correspondence with the international documents cited in this section are as follows:

---GB/T 20720:1-2019 Enterprise Control System Integration Part 1: Model and Terminology (IEC 62264-1:2013, IDT):

This section has made the following editorial changes:

--- Deleted the abbreviation of "MOM";

---The content of unit conversion has been added:

Please note that certain contents of this document may involve patents: The issuing agency of this document is not responsible for identifying these patents:

This part was proposed by China Machinery Industry Federation:

This part is under the jurisdiction of the National Automation System and Integration Standardization Technical Committee (SAC/TC159):

Drafting organizations of this section: Research on Intelligent Systems and Control of Beijing Institute of Machinery Industry Automation Co., Ltd., Tsinghua University, Zhejiang University

Institute, Goertek Co., Ltd., Qingdao Haier Industrial Intelligence Research Institute Co., Ltd:

Introduction

This part of GB/T 20720 further defines the formal object model for exchanging information described in IEC 62264-1, using

UML object model, attribute table and instance: Models and terms defined in this section:

- a) Emphasize the good integration behavior of the control system and the enterprise system throughout the life cycle of the system;
- b) It can be used to improve the existing integration capabilities of manufacturing control systems and enterprise systems;
- c) The application is not affected by the degree of automation:

This part especially provides a set of standard terminology, consistency concepts and models for the integration of control systems and enterprise systems, which will improve

Communication between all parties involved: The benefits will be:

- a) Reduce the time for users to make new products reach the maximum production level;

- b) Drive suppliers to provide suitable tools to realize the integration of control systems and enterprise systems;
- c) Drive users to better clarify needs;
- d) Reduce the cost of automated manufacturing processes;
- e) Optimize the supply chain;
- f) Reduce the amount of life cycle engineering:

IEC 62264 can be used to reduce the workload associated with implementing new products: The goal is to make enterprise systems and control systems interoperable

And easy integration:

The purpose of IEC 62264 does not mean:

- a) It is recommended that there is only one way to integrate the control system and the enterprise system;
- b) Forcing users to abandon their existing integrated processing methods;
- c) Restrict the development of the integration of control systems and enterprise systems:

Enterprise control system integration

Part 2: Objects and attributes of enterprise control system integration

1 Scope

This part of GB/T 20720 specifies the general interface exchange content between manufacturing control functions and other enterprise functions: Tested

The considered interface is the interface between the layer 3 manufacturing system and the layer 4 business system in the hierarchical model defined by IEC 62264-1: Its purpose

It is to reduce the risks, costs and errors associated with implementing these interfaces:

Because IEC 62264 covers many fields and there are many different standards in these fields, the semantic description of IEC 62264 is

It is positioned so that other standards can be mapped to this standard: For this reason, IEC 62264 defines a set of general interfaces including

Elements, and the mechanism to extend these elements during implementation:

The scope of this section is limited to the definition of the object model and attributes of the exchange information defined in IEC 62264-1:

This section does not define attributes that describe object relationships: