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

**GB/T 19114.1-2025**

Replacing GB/T 19114.1-2003

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**Industrial automation systems and integration - Industrial  
manufacturing management data - Part 1: General overview**

**(English Translation)**

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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 Part 1 of GB/T 19114. GB/T 19114 has the following parts published.

---Industrial Automation Systems and Integration of Industrial Manufacturing Management Data Part 1: Overview;

---Industrial Automation Systems and Integration. Industrial Manufacturing Management Data - Part 31: Resource Information Models;

---Industrial Automation Systems and Integration, Industrial Manufacturing Management, Data Resource Application Management. Part 32: Resource Application Management Data Conceptual model;

---Industrial Automation Systems and Integration. Industrial Manufacturing Management Data, Part 42: Time Models;

---Industrial Automation Systems and Integration, Industrial Manufacturing Management Data, Part 43: Manufacturing Process Management Data. Process Monitoring and Control Create a data model for data exchange;

---Industrial Automation Systems and Integration, Industrial Manufacturing Management Data, Part 44: Information Modeling for Workshop-Level Data Acquisition.

This document replaces GB/T 19114.1-2003 "Industrial Automation Systems and Integration - Industrial Manufacturing Management Data Part 1: Comprehensive" Compared with GB/T 19114.1-2003, the main technical changes in the "Description" are as follows, apart from structural adjustments and editorial modifications.

---Changes have been made to "Entity Entities", "Industrial Processes", "Master Production Plant", "Manufacturing Management", "Manufacturing Processes", "Master Production Schedule", and "Model".

Definitions of the terms "process," "production capacity," "production monitoring," "resources," and "time model" (see 3.6.12, 3.6.16, 3.6.19,...).

Versions 3.6.21, 3.6.23, 3.6.24, 3.6.26, 3.6.27, 3.6.30, 3.6.34, 3.6.37, 3.6.43, and versions 3.6.12 and 3.6.17 from the 2003 edition.

3.6.21, 3.6.23, 3.6.25, 3.6.26, 3.6.28, 3.6.29, 3.6.34, 3.6.39, 3.6.43, 3.6.49);

---Change the terminology from "performance" to "capacity", "capacity" to "production capacity", "capacity planning" to "production capacity planning", and "process" to "flow".

"Process control" refers to "flow control," "process planning" refers to "process specifications," "process planning preparation" refers to "process planning," and "discussion area" refers to the discussion area.

It is now called the "domain of discourse," and the definition has been revised (see 3.6.3-3.6.5, 3.6.14, 3.6.15, 3.6.28, 3.6.29, and 3.6.44, 2003 edition).

3.6.3~3.6.5, 3.6.14, 3.6.15, 3.6.31, 3.6.32 and 3.6.50);

---The terms and definitions of "process model", "inventory management", "process control", "production activity control", "production forecasting", and "procurement demand" have been removed.

(See sections 3.6.16, 3.6.19, 3.6.30, 3.6.33, 3.6.38, and 3.6.41 in the 2003 edition);

---Unused abbreviations "CEN", "LAN", "MMS", "P-Lib", "SGML", "STEP", and "WAN" (see [link to article]) have been removed.

(3.7 of the 2003 edition)

---The identification rules for ASN.1 have been changed (see Appendix A, Appendix A of the 2003 edition).

This document is modified to adopt ISO 15531-1:2004 "Industrial automation systems and integration - Industrial manufacturing management data - Part 1.

Overview.

Compared with ISO 15531-1:2004, the structure of this document has been adjusted as follows.

---The first paragraph of 4.1 corresponds to the suspension paragraph in Chapter 4 of ISO 15531-1:2004.

The technical differences between this document and ISO 15531-1:2004, and the reasons for these differences, are as follows.

--- Replace normative references to adapt to my country's technical conditions.

- ISO/IEC 2382-24:1995 has been replaced by GB/T 5271.24 (see 3.3);
- ISO/IEC 8824-1:1998 has been replaced by GB/T 16262.1 (see Appendix A);
- ISO 10303-1:1994 has been replaced by GB/T 16656.1 (see 3.1, Appendix A);
- ISO 10303-11:1994 has been replaced by GB/T 16656.11 (see 3.2);
- ISO 13584-42:1998 has been replaced by GB/T 17645.42 (see 3.4);
- ISO 14258:1998 has been replaced by GB/T 18999 (see 3.5);
- Following the actual citation in the text, ISO 13584-1:2001 has been replaced with ISO 13584 (all parts);
- Added reference to ISO 10303 (all parts).

---3.6 Other Terms and Definitions Terms not used in the text have been removed, including "flow model," "inventory management," "process control," and "production." "Activity control", "Production forecasting", "Procurement demand".

---3.7 Removed unused abbreviations "LAN", "MMS", "P-Lib", "SGML", "STEP", and "WAN" from the text.

The following editorial changes have been made to this document.

---As actually cited in the text, ISO 10303-49:1998 has been replaced with GB/T 16656.49 and moved to the references;

---Some notes and examples that were not applicable to the specific circumstances in my country have been removed;

---Appendix B has removed the sections on "Overview of Published Standards of ISO TC184/SC4" and "Published International Standards of ISO TC184/SC4".

The content retains the degree of consistency between GB/T 19114 and other relevant standards, and the task of data exchange in manufacturing systems.

The document includes sections on "Usage Methods" and "How GB/T 19114, in conjunction with other standards, can better promote the integration of manufacturing applications."

---The index of international standards has been removed.

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 by the China Machinery Industry Federation.

This document is under the jurisdiction of the National Technical Committee on Standardization of Automation Systems and Integration (SAC/TC159).

## Introduction

The information generated during the manufacturing process of industrial products is crucial to the product's lifecycle, especially in a sustainable development context.

In this environment, manufacturing can be defined as the transformation from raw materials or semi-finished products into finished products. This encompasses the entire production cycle from material preparation to finished product delivery.

In China, manufacturing management plays a guiding and regulating role in logistics, including its impact on resource management.

A manufacturing management system manages the entire production chain (from suppliers, through manufacturers and integrators, to distributors, and sometimes to consumers).

Logistics and product processes.

The production planning function of the supplier plant is closely related to the main production plant's main production scheduler. The production scheduler provides the