



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

GB/T 20720.4-2021

**Enterprise-control system integration - Part 4: Object model
attributes for manufacturing operations management
integration**

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1. Structure and Drafting Rules of Standardization Documents"

Drafting.

This document is part 4 of GB/T 20720 "Enterprise Control System Integration". GB/T 20720 has released the following 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.Object model attributes of manufacturing operation management integration;

---Part 5.Business and manufacturing affairs.

This document is equivalent to IEC 62264-4.2015 "Enterprise Control System Integration Part 4.Object Model of Manufacturing Operation Management Integration"

Attributes".

This document has made the following minimal editorial changes.

--- Changed Figure 1 from a color map to a black and white gray format, and correspondingly changed the description of the corresponding legend in 4.1.

Introduction

The increasing requirements for enterprise safety production, lean production and production quality have made smart factories a modern manufacturing enterprise to respond to shocks.

The inevitable choice for fierce market competition. The core supporting technology of the smart factory is the integration of enterprise systems and control systems, which requires the manufacturing execution system

The MES and its related systems have a clearly defined structure that matches the complexity of the production activities.

GB/T 20720 unifies the terminology, information object model and its data structure, and active object model of MES system integration. Siemens

The MES system developed by GE and from the architecture design to the application modules refer to this series of standards, which fundamentally meets the enterprise management control

The need for system integration.

GB/T 20720 consists of five parts.

---Part 1.Model and terminology. Clarify the relevant functions of the enterprise business system and manufacturing control system and be able to carry out normal information

The field of exchange.

---Part 2.Objects and attributes of enterprise control system integration. The definitions of these objects and attributes are used in the control system and the enterprise system.

The integration of the system improves the communication between all parties involved.

---Part 3.Manufacturing operation management activity model. The establishment of an activity model reduces the difference between the use of enterprise systems and manufacturing operations systems.

Related risks, costs and errors to make them interoperable and easier to integrate. It can also be used to reduce labor when new products go online.

Work amount.

---Part 4.Object model attributes of manufacturing operations management integration. Standard terminology and system established for the objects of operation management activities

One's concept and model can make the manufacturing operation management system interoperable and easy to integrate.

---Part 5.Business and manufacturing affairs. It focuses on the interface problems in the integration of enterprise control systems, and determines the transaction exchange process.

For the level of demand.

Part 2~Part 5 describes the different levels of the object model described in Part 1 and the definitions, models and data flows between them

Explains how the information exchange described in Part 1 can be exchanged in a robust, secure, and cost-effective manner.

Replaced, to ensure the integrity of the entire system.

Enterprise control system integration

Part 4.Integrated Manufacturing Operations Management

Object model properties

1 Scope

This document defines the object models and attributes that are exchanged between layer 3 manufacturing operations management activities (defined in IEC 62264-3).

2 Normative references

The contents of the following documents constitute the indispensable clauses of this document through normative references in the text. Among them, dated quotations

Only the version corresponding to that date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to

This document.

GB/T 20720.1-2019 Enterprise Control System Integration Part 1.Model and Terminology (IEC 62264-1.2013, IDT)

GB/T 20720.2-2020 Enterprise Control System Integration Part 2.Objects and Attributes of Enterprise Control System Integration (IEC 62264-2.2013, IDT)

IEC 61512-1 Batch Control Part 1.Models and Terminology (Batchcontrol-Part 1.Models and terminology)

Note. GB/T 19892.1-2005 Batch Control Part 1.Model and Terminology (IEC 61512-1.1997, IDT)

IEC 61512-4.2009 Batch Control Part 4.Batch Production Record (Batchcontrol-Part 4.Batchproduction records)

IEC 62264-3 Enterprise Control System Integration Part 3.Manufacturing Operation Management Activity Model (Enterprise-controlsystem integration-Part 3.Activitymodelsofmanufacturingoperationsmanagement)

Note. GB/T 20720.3-2010 Enterprise Control System Integration Part 3.Activity Model of Manufacturing Operation Management (IEC 62264-3.2007, IDT)

IEC 62682 Alarm system management for processing industry (Management of alarm systems for the process industries)

ISO /IEC 19501 Information Technology Open Distributed Processing Unified Modeling Language (UML) [Informationtechnology- Opendistributedprocessing-Unifiedmodelinglanguage(UML)]

ISO /IEC 19505-1 Information Technology Object Management Group Unified Modeling Language (OMG UML) Part 1.Infrastructure [In- formationtechnology-Object ManagementGroup Unified ModelingLanguage (OMG UML)- Part 1.Infrastructure]

ISO /IEC 19505-2 Information Technology Object Management Group Unified Modeling Language (OMG UML) Part 2.Superstructure [In- formationtechnology-Object ManagementGroup Unified ModelingLanguage (OMG UML)- Part 2.Superstructure]

ISO 8601 data elements and exchange format information exchange data and time