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NATIONAL STANDARD OF THE

PEOPLE'S REPUBLIC OF CHINA

GB/T 20720.1-2019

Replacing GB/T 20720.1-2006

Enterprise-control system integration -- Part 1: Models and terminology

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Foreword

GB/T 20720 "Enterprise Control System Integration" is divided into the following sections.

--- Part 1. Models and terminology;

--- Part 2. Object model properties;

--- Part 3. Activity model for manufacturing operations management;

--- Part 4. Manufactured operational management integrated object model properties

--- Part 5. Business and Manufacturing Affairs

This part is the first part of GB/T 20720.

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

This part replaces GB/T 20720.1-2006 "Enterprise Control System Integration Part 1. Models and Terminology", and GB/T 20720.1-

The main technical changes in.2006 are as follows.

---Modified the functional level (see 5.2.1, 5.2.1 of the.2006 edition);

---Modified equipment level (see 5.3.1, 5.3.1 of.2006 edition);

--- Increased the physical asset equipment model (see 5.4);

--- Added a generic model for manufacturing operations management categories (see 7.2);

--- Removed the official UML model (see 7.5 of the.2006 edition);

--- Increased data definition (see 8.3);

--- Revised the capacity and capability model in Chapter 8 (see 8.3.2,.2006 version 7.2.2);

--- Added other corporate activities that affect manufacturing operations management (see

Appendix A);

--- Added relevant standards (see Appendix B);

--- Removed sub-clauses on decision-making levels (see 5.4 of.2006 edition), added current ones in normative references

ISO 15704 (see Chapter 2);

--- Removed the original Appendix C and added a new Appendix C (see Appendix C;.2006 Edition Appendix C);

--- Removed the original Appendix D and added a new Appendix D (see Appendix D;.2006 Edition Appendix D);

--- Removed the original Appendix E, (see Appendix E of the.2006 edition);

--- Removed the original Appendix F (see Appendix F of the.2006 edition).

This section uses the translation method equivalent to IEC 62264-1.2013 "Enterprise Control System Integration Part 1. Models and Terminology".

The documents of our country that have a consistent correspondence with the international documents referenced in this part are as follows.

---GB/T 19892.1-2005 Batch control Part 1. Models and terminology (IEC 61512-1..1997, IDT)

---GB/T 20720.2-2006 Enterprise Control System Integration Part 2. Object Model Attributes (IEC 62264-2.2004,

IDT)

---GB/T 20720.3-2007 Enterprise Control System Integration Part 3. Activity Model for Manufacturing Operations Management (IEC 62264-3.

2007, IDT)

---GB/T 20720.5-2015 Enterprise Control System Integration Part 5. Business and Manufacturing (IEC 62264-5.

2011, IDT)

---GB/T 18757-2008 Industrial automation system enterprise reference architecture and methodology requirements (ISO 15704.

2000, IDT)

This section has made the following editorial changes.

--- An errata was made on the error in the numbering of Chapter 3 of the original International Standard.

Introduction

This section is limited to describing the relevant functions in the field of enterprise and manufacturing control, and what information can be exchanged in this field. Follow-up

Part will explain how this information is exchanged in a robust, secure, and cost-effective manner to ensure the end of the entire system.

Integrity. This section applies to the manufacturing and control areas, including manufacturing operations management systems, production control systems, and other manufacturing related

Systems and equipment. The terms "enterprise", "control", "process control" and "manufacturing" use their most common meaning, making them suitable for a wide range of industries.

field.

This section defines the standard models and terminology used to describe the interface between an enterprise business system and its manufacturing control system. In this section

Models and terminology.

--- Emphasizes the good integration of control systems and enterprise systems throughout the life cycle of the system;

--- Can be used to improve existing integration capabilities between manufacturing control systems and enterprise systems;

--- Not affected by the degree of automation in the application.

In particular, this section defines a set of standard terminology and consistent concepts and models for controlling the integration of systems with enterprise systems.

To improve communication and communication between various parts of the system. The advantages it brings will be.

--- Reduce the time for users to reach the maximum production level of new products;

--- Enables vendors to provide the right tools to integrate control systems into enterprise systems;

--- Enable users to better define their needs;

--- Reduce the cost of automated manufacturing processes;

---Optimize the supply chain;

--- Reduce engineering costs in the life cycle.

This section is developed to.

---The person who designs, constructs or operates the manufacturing equipment;

--- Responsible for designating the interface between the manufacturing process control system and other systems of the commercial enterprise;

--- Design, create, market and integrate automation products (for connecting manufacturing operations and business systems);

--- Designate, design, or manage products to create and manufacture people who move and store within the enterprise.

The purpose of this section is not.

--- It is recommended that there is only one way to integrate the control system with the enterprise system;

--- Forcing users to abandon their existing integration methods;

--- Limit the development of control systems and enterprise systems integration.

This section discusses the interface between manufacturing control functions and other enterprise functions based on the CIM published by ISA.

Purdue reference model (hierarchy). This section gives a partial model or reference model as defined in ISO 15704.

The scope of this section is limited to describing related functions in the enterprise and manufacturing control fields, and which objects in these areas are normal.

exchange.

Chapter 4 is intended to describe the background of the models described in Chapters 4 and 5. It gives criteria for defining manufacturing operations and controls

The scope of the system field. Chapter 4 does not contain a formal definition of models and terminology, but it describes the background used to understand other bars.

Knowledge.

Chapter 5 is intended to describe the hierarchical model of activities included in manufacturing control companies. It uses general terminology to illustrate manufacturing control

Related activities and activities taking place at the business logistics level. Chapter 5 also gives the level of equipment related to manufacturing operations and control.

model. Chapter 5 contains definitions for models and terms.

Chapter 6 is a general model for describing functions related to business and control