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

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**Automation systems and integration - Applications integration
approach using information exchange requirements modelling
and software capability profiling**

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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 uses the translation method equivalent to adopting ISO /T R18161.2013 "Automation System and Integration Based on Information Exchange Demand Modeling and

Application Integration Methods for Software Capability Building Regulations.

Introduction

The motivation for ISO 16100 comes from the industrial and economic environment, especially.

a) The growth foundation of vendor-specific solutions;

- b) Difficulties of users in applying standards;
- c) Need to transform into a modular system integration tool set;
- d) Recognize that the application software and the expertise to apply the software are the assets of the enterprise.

ISO 16100 is an international standard for expressing computer-understandable and human-readable capabilities. The goal is to provide a

Independent of the specific system architecture or implementation platform method, used to represent the manufacturing application software for its entire manufacturing application life cycle

The ability to play a role. This can reduce production and information management costs for users and suppliers/suppliers of manufacturing applications.

ISO 18435 provides a framework for uniform use of industry and international standards to integrate control, diagnosis, prediction, capability assessment and maintenance

application. By using the ISO 15745 application integration modeling method, key interoperability interfaces can be identified and briefly based on the configuration file write it down.

ISO 18435 also provides elements and rules to describe the integration requirements of automation applications. These elements include combining automation applications with

The key aspects of his application integration, and the relationship between these key aspects. The rules include information exchange to support in-app as well as in-app

Interoperability between.

This document describes use cases for modeling smart pump applications in Appendix A. The manufacturing software unit is described in detail in Appendix B

Build a scale board. The specific regulations for manufacturing software units are described in detail in Appendix C. Appendix D describes the intelligence based on the ISO 18435 methodology.

Can pump information exchanged between manufacturing software units in the application.

Automation system and integration based on information exchange requirements

Application integration method of modeling and software capability establishment

1 Scope

This document describes the use of ISO 16100 and ISO 18435 to specify the information exchange requirements between applications. The method is based on

ISO 18435 Application Interaction Matrix Element (AIME)/Application Area Matrix Element (ADME) template and ISO 16100 manufacturing software sheet

Meta (MSU) capability model.

This document also gives an example of a method to describe the interoperability requirements of integrated smart pump applications, including pump control applications and pump diagnostics.

Application.

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 19902.3-2006 Industrial Automation System and Integrated Manufacturing Software Interoperability Building Regulations Part 3.Interface Service

Service, agreement and capability template (ISO 16100-3.2005, IDT)

GB/T 19902.5-2011 Industrial Automation System and Integrated Manufacturing Software Interoperability Building Regulations Part 5.Based on multiple

Methodology for specific matching of competency structure (ISO 16100-5.2009, IDT)

GB/T 27758.2-2015 Industrial Automation System and Integrated Diagnostics, Capability Assessment and Maintenance Application Integration Part 2.

Description and definition of application field matrix elements (ISO 18435-2.2012, IDT)

3 Terms and definitions

GB/T 19902.3-2006, GB/T 19902.5-2011 and GB/T 27758.2-2015 and the following terms and definitions

Applies to this document.

3.1

Application domain matrix element applicationdomainmatricelement;ADME

An entry in the application domain matrix is used to organize the exchange of information between applications.

[Source. GB/T 27758.2-2015, 3.2]

3.2

Application interaction matrix element; AIME

An entry in the application interaction matrix is used to indicate the resource capability to support information exchange.

[Source. GB/T 27758.2-2015, 3.4]

3.3

Application Interoperability Profile AIP

A single specification that refers to a set of special rules, and this group of special rules refers to a part of the basic norms that can be special rules themselves.

Note. The special rules group can include special rules for process, special rules for information exchange, special rules for resources, and other application interoperability special rules (AIP).

[Source. GB/T 27758.2-2015, 3.5]