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

GB/T 40283.3-2021

**Automation systems and integration - Interoperability of capability
units for manufacturing application solutions - Part 3: Verification and
validation of interoperability among capability units**

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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 the third part of GB/T 40283 "The Interoperability of Capability Units for Automation Systems and Integrated Manufacturing Application Solutions".

GB/T 40283 has released the following parts.

---Part 3.Verification and confirmation of interoperability of capability units.

The translation method used in this document is equivalent to the adoption of ISO 16300-3.2017 ``Capability List for Automation Systems and Integrated Manufacturing Application Solutions"

Meta Interoperability Part 3.Verification and Confirmation of Interoperability of Capability Units.

The Chinese documents that have consistent correspondence with the normatively cited international documents in this document are as follows.

---GB/T 19902.1-2005 Industrial Automation System and Integrated Manufacturing Software Interoperability Building Regulations Part 1.Frame

Rack (ISO 16100-1.2002, IDT)

---GB/T 19902.2-2005 Industrial Automation System and Integrated Manufacturing Software Interoperability Building Regulations Part 2.Building

Regulatory methodology (ISO 16100-2.2003, IDT)

---GB/T 19902.3-2006 Industrial Automation System and Integrated Manufacturing Software Interoperability Building Regulations Part 3.Connection

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

---GB/T 19902.6-2012 Industrial Automation System and Integrated Manufacturing Software Interoperability Building Regulations Part 6.Basic

Interface services and protocols for specific matching in a multi-capability structure (ISO 16100-6.2011, IDT)

---GB/T 25000.10-2016 System and Software Engineering System and Software Quality Requirements and Evaluation (SQuaRE) Part 10

Sub. System and software quality model (ISO /IEC 25010.2011, IDT)

Introduction

To establish GB/T 40283, multiple steps need to be taken. The initial steps show which interoperability is enabled using the software capability profile

For sexual service. The subsequent steps developed specific methods and mechanisms for providing these interoperability services. The final output of GB/T 40283 is

File.

---Part 1.Application requirement capability unit interoperability criteria, specifying a

framework, the purpose is to provide capabilities based on a set of MSU

Describe automation solutions. The framework will also define a set of capability elements and composition

The capability requirements for automated systems express interoperability criteria.

---Part 2.Capability template and software unit classification, specifying the template definition, the purpose is to describe the software unit of the automation solution

The capability can be mapped to the functional requirements of the target manufacturing application. The mapping rules are also specified according to the attributes of the capabilities, using

Contents of the catalog items that make up the software unit.

---Part 3.Verification and confirmation of the interoperability of the capability unit, specifying the capability to verify application requirements and system solutions

A framework for unit interoperability.

---Part 4.Capability unit assessment for manufacturing application requirements, stipulated to obtain from the catalog of software units to meet manufacturing applications

The search method of the required candidate capability unit, and the report structure as the search result will be described, the purpose is to indicate the software unit

The degree of correspondence between the candidates in the catalog and the requirements of the manufacturing application.

GB/T 40283 meets the requirements of software interoperability in the field of industrial automation by users and suppliers of manufacturing software.

User interoperability requirements include.

---Integrate automation application systems through the ability to combine a set of software components from different sources;

---Replace another software component in the software unit to provide the same ability as required by the automated application system;

---Integrate the capabilities of the software unit from one resource system platform to another platform;

---Verify and confirm the ability of the software unit to meet the requirements of the automation application system.

Supplier requirements include.

--- Represents the set of capabilities provided by the software components used in the software unit;

---Verify whether the software component capabilities are part of the required software unit capabilities;

---Classify software units according to their interoperability capabilities in automated application systems to support wide distribution.

GB/T 40283 also addresses software interoperability services, including.

---Access to the description of software capabilities to achieve interoperability evaluation;

---Use search engines to automatically search and locate candidate software units and components;

---Represents the dependencies between software components of automation applications running on a specific system platform.

First define software capabilities based on potential functions. Then express it as facts about software, capabilities, and capabilities. Development

The purpose of the GB/T 19902 series of standards is to provide a standardized method to describe the system based on the manufacturing software unit (MSU) capability profile.

The ability to create software. In GB/T 19902, the software components are included in the MSU. GB/T 19902 also provides a pass capacity allocation

The configuration file uses the capabilities of the MSU as a means of information exchange. Software capability analysis is the basis for providing the above-mentioned software interoperability services. Make

Use GB/T 19902 and use it as the basis of GB/T 40283.

Automation system and integrated manufacturing application solutions

Capability Unit Interoperability Part 3.Capability Unit

Verification and confirmation of interoperability

1 Scope

This document specifies the manufacturing capability unit that has a series of capabilities to meet the functional requirements of the target manufacturing application solution

(MCUs) A framework for verification and validation of interoperability.

This document applies to the verification and validation framework that describes the use and implementation steps of the interoperability guidelines in Part 1.

2 Normative references

The contents of the following documents constitute the indispensable clauses of this