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Industrial automation systems and integration - Product data representation and exchange - Part 14: Description methods: The EXPRESS-X language reference manual

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Table of Contents

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 14 of GB/T 16656.GB/T 16656 "Industrial automation system and integrated product data expression and exchange"

"Change" has released the following parts.

---Part 1.Overview and basic principles;

---Part 11.Description method. EXPRESS Language Reference Manual;

---Part 14.Description method. EXPRESS-X Language Reference Manual;

---Part 21.Implementation method. plain text encoding of exchange file structure;

---Part 28.Implementation method. EXPRESS schema and XML expression of data (using XML schema);

---Part 31.Conformance testing methodology and framework. basic concepts;

---Part 32.Conformance testing methodology and framework. Requirements for testing laboratories and customers;

---Part 34.Conformance testing methodology and framework. abstract testing methods for application protocol implementation;

---Part 41.Integrating Common Resources. Product Description and Support Principles;

---Part 42.Integrating common resources. geometric and topological expressions;

---Part 43.Integrating common resources. expression structures;

---Part 44.Integrating common resources. product structure configuration;

---Part 45.Integrating common resources. materials and other engineering properties;

---Part 46.Integrating common resources. visual display;

---Part 47.Integrating Common Resources. Shape Change Tolerance;

---Part 49.Integrated common resources. process structure and characteristics;

---Part 51.Integrating general resources. mathematical expressions;

---Part 54.Integrating general resources. classification and set theory;

---Part 55.Integrating common resources. processes and hybrid expressions;

---Part 56.Integrating common resources. status;

---Part 101.Integrated Application Resources. Drawing;

---Part 102.View exchange protocol conforming to GB/T 16656 conformance specification;

---Part 105.Integrated Application Resources. Kinematics;

---Part 238.Application protocol. Application interpretation model for computer numerical controllers;

---Part 501.Application explanation construction. edge-based wireframe;

---Part 502.Application explanation Construction. Shell-based wireframe;

---Part 503.Application to interpret construction. geometrically bounded two-dimensional wireframe;

---Part 504.Application of interpretation constructs. drawing annotations;

---Part 505.Application interpretation structure. pattern structure and management;

---Part 506.Application interpretation constructs. drawing elements;

---Part 507.Application to interpret construction. geometrically bounded surfaces;

---Part 508.Application explanation construction. non-manifold surfaces;

---Part 509.Application explanation construction. manifold surface;

---Part 513.Application of interpretation constructs. basic boundary expressions;

---Part 520.Application interpretation constructs. related drawing elements;

---Part 1001.Application module. Appearance assignment;

---Part 1003.Application module. Curved appearance;

---Part 1002.Application Module. Color

---Part 1004.Application Modules. Basic Geometries

---Part 1005.Application modules. Basic topology

---Part 1006.Application module. basic expression;

---Part 1007.Application module. General surface appearance;

---Part 1008.Application module. layer assignment;

---Part 1009.Application Modules. Shape Appearances and Layers.

This document is equivalent to ISO 10303-14.2005 "Industrial automation systems and integrated product data expression and exchange Part 14.

Description method. EXPRESS-X Language Reference Manual.

This document has made the following minimal editorial changes.

---Deleted normative reference documents that are not cited in the text.

Please note that some content in this document may be subject to patents. The publisher of this document assumes no responsibility for identifying patents.

Introduction

GB/T 16656 is a national standard for computer interpretable representation and exchange of product data. Its purpose is to provide an independent

It is a neutral mechanism for any specific system to describe product data throughout the product life cycle. This mechanism is not only suitable for neutral file exchange, but also

Suitable as a basis for implementing and sharing product databases and archives.

GB/T 16656 "Data Expression and Exchange of Industrial Automation Systems and Integrated Products" is a standard composed of multiple parts.

Published separately. GB/T 16656 "Industrial automation systems and integrated product data expression and exchange" consists of the following series.

---Parts 1 to 19 describe the method;

---Implementation methods of Parts 20 to 29;

---Parts 30 to 39 conformance testing methods and framework;

---Parts 40 to 59 integrate common resources;

---Parts 100 to.199 integrated application resources;

---Parts.200 to 299 Application Agreement;

---Parts 300 to 399 Abstract Test Suite;

---Parts 400 to 499 application modules;

---Parts 500 to 599 apply explanation construction;

---Parts 1000 to.1999 application modules.

This document belongs to the description method series of GB/T 16656.

It is assumed that the reader of this document is familiar with the data specification language defined in ISO 10303-11 and the plain text defined in ISO 10303-21

This coding standard.

Industrial Automation Systems and Integrated Product Data

Expression and Exchange Part 14.Descriptive Methods.

EXPRESS-X Language Reference Manual

1 Scope

This document specifies a language for specifying relationships between data described by the EXPRESS schema, and for specifying the

An alternative view of the data described by the PRESS schema. The language is called EXPRESS-X.

EXPRESS-X is a structured data mapping language. It consists of a language that unambiguously specifies the relationships between EXPRESS patterns

Elemental composition.

The following are within the scope of this document.

---Mapping from data described by one EXPRESS schema to data described by another EXPRESS schema;

---From data described by one version of an EXPRESS schema to data described by another version of the EXPRESS schema

A mapping where the two schemas have different names;

---Requirements specification for data converters used in data sharing and data exchange applications;

---Specification of replaceable views of data defined by EXPRESS schema;

---Other representations of application protocol mapping tables;

---Mathematically possible two-way mapping;

--- A specification of constraints that can evaluate the data produced by the mapping.

The following are outside the scope of this document.