

ICS 25.040.40

CCS L 67



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

GB/T 16656.508-2010

**Industrial automation systems and integration -- Product data
representation and exchange -- Part 508: Application
interpreted construct: Non-manifold surface**

工业自动化系统与集成 产品数据表达与交换 第508部分：应用解释构造：非流形
曲面

(English Translation)

Issued on: January 14, 2011

Implemented on: June 1, 2011

Issued by: Standardization Administration of China

Table of Contents

Preface

Introduction

1 Scope

2 Normative references

3 Terms, definitions and abbreviations

Terminology 3.1 ISO 10303-1 defined in

3.2 GB/T 16656.42 defined term

3.3 GB/T 3 defined in terms 16656.202

Foreword

Is a multi-part standard of GB/T 16656 "Industrial automation systems and integration - Product data representation and exchange", the various parts of a single Alone published. GB/T 16656 and the relevant portions of the composition of a plurality of sub-series, namely.

- Part 1 to Part 19 specifies the method described;
- Part 20 to Part 29 provides for implementation;
- Part 30 to Part 39 specifies conformance testing methodology and framework;
- Part 40 to Part 59 specifies Integrated generic resources;
- Part 100 to Part 199 provides integrated application resources;
- Part 200 to Part 299 specifies the application protocol;
- Part 300 to Part 399 specifies the abstract test suite;
- Part 400 to Part 499 specifies the application module;
- Part 500 to Part 599 specifies the application interpreted construct;
- Part 1000 through part of 1999 provides for the application modules.

GB/T 16656 "Industrial automation systems and integration - Product data representation and exchange" has been released and the upcoming release include the following section.

- Part 1. Overview and fundamental principles;
- Part 11. Description methods. EXPRESS language reference manual;

- Part 21. Implementation methods. Clear text encoding of the exchange file structure;
 - Part 28. Implementation. XML data model and expression EXPRESS (using XML mode);
 - Part 31. Conformance testing methodology and framework. General concepts;
 - Part 32. Conformance testing methodology and framework. Requirements on testing laboratories and customer requirements;
 - Part 34. Conformance testing methodology and framework. Abstract test methods for application protocol implementations;
 - Part 41. Integrated generic resources. Product description and support;
 - Part 42. Integrated generic resources. Geometric and topological representation;
 - Part 43. Integrated generic resources. Representation structures;
 - Part 44. Integrated generic resources. Product structure configuration;
 - Part 45. Integrated generic resource. Materials;
 - Part 46. Integrated generic resources. visual display;
 - Part 47. Integrated generic resources. Shape variation;
 - Part 49. Integrated generic resources. Process structure and properties;
 - Part 51. Integrated generic resource. Mathematical expression;
 - Part 54. Integrated generic resource. Classification and set theory;
 - Part 55. Integrated generic resources. Process and mixed expression;
 - Part 56. Integrated generic resource. State;
 - Part 101. Integrated application resource. Drawing;
 - Part 105. Integrated application resource. Kinematics;
 - Part 201. Application protocol. Explicit draughting;
 - Part 202. Application protocol. Associative draughting;
 - Part 203. Application protocol. Configuration controlled design;
- GB/T 16656.508-2010/ISO 10303-508:2001
- Part 238. Application protocol. computer numerical controller application interpreted model used;
 - Part 501. Application interpreted construct. Based on the frame side;
 - Part 502. Application interpreted construct. Shell-based wireframe;

- Part 503. Application interpreted construct. Geometrically bounded 2D wireframe;
- Part 504. Application interpreted construct. Drawing annotation;
- Part 505. Application interpreted construct. pattern structure and management;
- Part 506. Application interpreted construct. Drawing elements;
- Part 507. Application interpreted construct. Geometrically bounded surface;
- Part 508. Application interpreted construct. Non-manifold surface;
- Part 509. Application interpreted construct. Manifold surface;
- Part 513. Application interpreted construct. Basic boundary representation;
- Part 520. Application interpreted construct. Associative draughting elements;
- Part 1001. Application module. Appearance assignment;
- Part 1002. Application module. color;
- Part 1003. Application module. Curve appearance;
- Part 1004. Application module. Basic geometry;
- Part 1005. Application module. Basic topology;
- Part 1006. Application module. basal expression;
- Part 1007. Application module. General surface appearance;
- 1008. Application module. Layer assignment;
- Part 1009. Application module. Shape appearance and layers.

This section is GB/T Part of 50,816,656.

This section identical with ISO 10303-508:2001 "Industrial automation systems and integration - Product data representation and exchange - Part 508 Min Application interpreted construct. Non-manifold surface. " Technical content and structure of this section and ISO 10303-508:2001 is consistent, in the preparation of the rules in line with GB/T 1.1-2000 "standard Normalized for the work - Part 1. Standard structure and drafting rules "for ease of use, made the following editorial changes.

a) by deleting the ISO foreword;

b) For each underlined in bold for EXPRESS English language to describe the entity names, attribute names and function names, etc., in order to maintain its English original intent, in this section, uses its English name, only when it is used as the title, we have to increase their name in front of the English Type attribution described.

This part of the Annex A, Annex B normative Annex, Appendices C and D are informative

appendices.

This section presents the Machinery Industry Federation.

This part of the automation systems and integration by the National Standardization Technical Committee (SAC/TC159) centralized.

This part mainly drafted by. China National Institute of Standardization.

Introduction

GB/T 16656 is a computer-interpretable representation and exchange of product data standards, the goal is to provide products throughout the entire life, Neutral mechanism independent of any particular system described product data cycle. The nature of this description makes it suitable not only neutral file Exchange, but also to achieve shared infrastructure and product database and file archives.

GB/T 16656 by a series of parts, each part published separately. GB/T 16656 all parts are belong to the following series A. Describe the method, resource integration, application interpreted construct, application protocols, abstract test suites, implementation and conformance testing and application modules.

This section is an application interpreted construct series.

Application interpreted construct (AIC) provides a logical combination of tectonic interpretation of these explanations configuration across multiple application environments to support the number of products According to a specific function uses. It constructs a general explanation of integrated resources that support different application protocols shared information needs.

This part of non-manifold geometric surface model for the description of the appearance of the provisions Application interpreted construct. It includes the geometry and topology of resources, with in the definition of non-manifold surfaces from the base curves and surfaces as well as sculptures composed of curves and surfaces.

GB/T 16656.508-2010/ISO 10303-508:2001 Industrial automation systems and integration - Product data representation and Exchange - Part 508. Application interpreted construct.

Non-manifold surfaces

1 Scope

This section GB/T 16656 by non-manifold surface model described in detail to explain the resources to meet the integrated geometry description demand.

This section applies to.

--- 3D points;