

ICS 25.040.40

CCS L 67



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

GB/T 16656.507-2010

**Industrial automation systems and integration -- Product data
representation and exchange -- Part 507: Application
interpreted construct: Geometrically bounded surface**

工业自动化系统与集成 产品数据表达与交换 第507部分：应用解释构造：几何有
界曲面

(English Translation)

Issued on: January 14, 2011

Implemented on: May 1, 2011

Issued by: Standardization Administration of China

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Foreword

GB/T 16656 "Industrial automation systems and integration - Product data representation and exchange" is a multi-part standard, ministries Points published separately. 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;
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- 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;
- 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;
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- 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 50,716,656.

This section identical with the international standard ISO 10303-507:2001 "Industrial automation systems and integration - Product data representation and exchange Part 507. Application interpreted construct. Geometrically bounded surface "(in English), its technical content and structure and ISO 10303-507:2001 holding Unanimously, for ease of use, we made the following editorial changes.

a) by deleting the ISO foreword, index;

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 appendix, Appendix C, Appendix D is an informative annex.

This part is proposed by China 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 used for computer interpretable product data representation and exchange of technical standards. Its purpose is to provide a product throughout the whole A lifecycle neutral mechanism independent of any particular system described in the product data. Which describes functionality not only for neutral file post Change, but also to achieve and infrastructure sharing product databases and archiving.

GB/T 16656 composed of several parts, each part published separately. All parts are belonging to one of the following series. description methods, collection A resource, Application interpreted construct, application protocols, abstract test suites, implementation and conformance testing. This section is an application interpreted construct series.

Application interpreted construct (AIC) gives a logical combination of interpretation constructed to support the use of product data in multiple application environment related special Setting function. Constructs integrated resources to support the needs of the public to explain the application protocol to share information.

This part bounded surface geometry model geometry describes the provisions Application interpreted construct. It includes the definition of a pure geometric bounded mold Resource type geometry, geometric model bounded by the basic composition and sculptural curves and surfaces.

Industrial automation systems and integration Product data representation and exchange Part 507. Application interpreted construct. Geometric Bounded surface

1 Scope

This section GB/T 16656 specifies the interpretation of integrated resources, bounded by the geometric surface model to meet the express geometry it needs.

The following fall within the scope of this section.

- 3D points;
- Defining points in a curve or surface parameter space;
- 3D curve;
- Define the curve in surface parameter space.