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

GB/T 20719.13-2010

**Industrial automation systems and integration -- Process
specification language -- Part 13: Duration and ordering
theories**

工业自动化系统与集成 过程规范语言 第13部分：时序理论

(English Translation)

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Foreword

GB/T 20719 "Industrial automation systems and integrated process specification language" is divided into.

- Part 1. Overview and Fundamentals;
- Part 11. PSL core;
- Part 12. Outer core;
- Part 13. Timing theory;
- Part 14. Resource theory;
- Part 15. Activity performance theory;
- Part 21. EXPRESS;
- Part 22. XML;
- Part 23. UML;
- Part 41. Activities;
- Part 42. time and state;
- Part 43. Sequence;
- Part 44. Defining the expansion of resources;
- Part 45. Types of resource sets;

- Part 46. Processing activities;
- Part 47. Purpose of process.

This part is part 13 of GB/T 20719.

This part is equivalent to ISO 18629-13.:2006 "Industrial automation systems and integration process specification language Part 13. Timing on "(English version).

The technical content and composition of this part are consistent with ISO 18629-13.:2006 and are consistent with GB/T 1.1-2000. Just according to China's national standards for the development of requirements and for the convenience of use, made the following editorial changes.

--- "ISO 18629" to "GB/T 20719", change "ISO 18629-13" to "GB/T 20719.13" or "GB/T 20719" this part ";

--- Deleted the preface of ISO 18629-13.:2006 and redrafted the preface in accordance with our national standards;

- Change the guidance in ISO 18629-13.:2006, Chapter 2, "Normative references" to GB/T 1.1-2000 Guide language.

- Change the international standard number that appears in this section to the national standard to national standard number for ease of use and access.

Unconverted international standard reservation.

--- delete the original does not meet the standards of our preparation of the words.

--- satisfying in the index is not found in the original, so in the English and Chinese index are deleted.

Appendix A to this section is a normative appendix, Appendix B is an informative appendix.

This part is made by the China Machinery Industry Federation.

This part is headed by the National Automation System and Integrated Standardization Technical Committee (SAC/TC159).

Introduction

GB/T 20719 is a national standard for the use of computer-interpretable information exchanges related to the manufacturing process.

The GB/T 20719 standard contains all the parts that are combined to provide a language for describing the manufacturing process throughout the entire production process (The production process may be located in an industrial company, may also span several industrial sectors or companies), and independent of any particular representation of the mold type. The essence of language makes it suitable for sharing process information

related to manufacturing at all stages of the production process.

This part of GB/T 20719 provides a description of the core elements of the language defined in GB/T 20719.

All parts of GB/T 20719 are independent of the representation or model of any particular process used in the software industry of manufacturing management.

All parts of this standard work together to provide a structural framework for improving the synergy of these applications.

Industrial automation systems and integration Process specification language Part 13.
timing theory

1 Scope

This part of GB/T 20719 provides a statement of the basic concepts related to the order of activities and the cycle constraints, as follows.

The order of occurrence of subordinates;

---cycle;

The order of iteration the occurrence of tree homomorphism Activity envelope.

2 Normative reference documents

The terms of this document are the terms of this part by reference to this part of GB/T 20719. Any reference to the date of the text , All subsequent amendments (excluding corrigenda) or revisions do not apply to this part, however, encouragement under this section the parties to the agreement study whether the latest version of these documents can be used. For undated references, the latest edition of this document applies section.

GB/T 16262.1 Information technology Abstract syntax notation (ASN.1) Part 1. Basic notation specification (GB/T 16262.1-2006, ISO/IEC 8824-1.:2002, IDT) GB/T 19114.1 Industrial automation systems and integrated industrial manufacturing management data Part 1. Summary (GB/T 19114.1-2003, ISO 15531-1.:2002, IDT) GB/T 20719.1 Industrial automation systems and integration process specification language - Part 1. Overview and basic principles (GB/T 20719.1-2006, ISO 18629-1.:2004, IDT) ISO 18629-11.:2005 Industrial automation systems and integration process specification language - Part 11. PSL core ISO 18629-12 Industrial automation systems and integration process specification language - Part 12. External cores

3.1 Terms and definitions

The following terms and definitions apply to this part of GB/T 20719.

3.1.1

Self - congruence automorphism Preserves the one-to-one mapping of the elements in a model and the set of functions.

3.1.2

Axiom axiom

A formal formula in a formal language that constrains the interpretation of symbols in a vocabulary of a language.

[GB/T 20719.1]

3.1.3

Exchange group commutativegroup Under the internal binary operation (OP), there is an algebraic structure of $aOPb = bOPa$.