
**Industrial automation systems and
integration — Process specification
language —**

Part 42:

**Definitional extension: Temporal
and state extensions**

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*Systemes d'automatisation industrielle et integration — Langage de
specification de procede —*

Partie 42. Extension de definition: Extensions temporelle et d'etat

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Foreword

The International Organisation for Standardisation (ISO) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organisations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75% of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

This part of ISO 18629 was prepared by the Technical committee ISO/TC184 *Industrial automation systems and integration*, Subcommittee SC4, *Industrial data*.

A complete list of parts of ISO 18629 is available from the Internet:

<https://standards.iteh.ai/catalog/standards/sist/a513b490-ca06-49a2-bc8f-ce053c8a30a0/iso-18629-42-2006>
<http://www.tc184-sc4.org/titles/>

Introduction

ISO 18629 is an International Standard for the computer-interpretable exchange of information related to manufacturing processes. Taken together, all the parts contained in the ISO 18629 Standard provide a generic language for describing a manufacturing process throughout the entire production process within the same industrial company or across several industrial sectors or companies, independently from any particular representation model. The nature of this language makes it suitable for sharing process specifications and properties related to manufacturing during all the stages of a production process.

This part of ISO 18629 provides a description of the definitional extensions of the language related to activity extensions defined within ISO 18629.

All parts of ISO 18629 are independent of any specific process representation model used in a given application. Collectively, they provide a structural framework for improving the interoperability of these applications.

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Industrial automation systems and integration — Process specification language —

Part 42:

Definitional extension: Temporal and state extensions

1 Scope

This part of ISO 18629 provides a specification of non-primitive concepts of the language, using a set of definitions written in the language of ISO 18629. These definitions provide axioms for terminology in this part of ISO 18629.

The following is within the scope of this part of ISO 18629:

- definitions of state and time-related concepts specified using concepts of ISO 18629-11 and ISO 18629-12;
- constraints on the occurrences of activities that are expressed using time relations from ISO 18629-11 and state relations from ISO 18629-12.

The following is outside the scope of this part of ISO 18629:

- definitions of concepts specified using concepts of ISO 18629-11 and ISO 18629-12 that are independent of state and time relations.

NOTE: state and time-related concepts are concepts that are related to the time and the status of any entity related to manufacturing process and needed to specify it.

2 Normative References

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 8824-1, *Information technology - Abstract Syntax Notation One (ASN.1) - Part 1: Specification of basic notation*

ISO 10303-1, *Industrial automation systems and integration - Product data representation and exchange - Part 1: Overview and fundamental principles*

ISO 15531-1, *Industrial automation systems and integration - Industrial manufacturing management data - Part 1: General overview*

ISO 18629-1: 2004, *Industrial automation systems and integration – Process specification language – Part 1: Overview and basic principles*

ISO 18629-11: 2005, *Industrial automation systems and integration – Process specification language – Part 11 : PSL core*