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Australian Standard™

Industrial automation systems and integration—Parts library

Part 31: Implementation resources: Geometric programming interface

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Australian Standard™

Industrial automation systems and integration—Parts library

Part 31: Implementation resources: Geometric programming interface

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PREFACE

This Standard was prepared by the Standards Australia Committee IT-006, Information Technology for Industrial Automation and Integration.

This Standard is identical with, and has been reproduced from, ISO 13584-31:1999, *Industrial automation systems and integration—Parts library,* Part 31: *Implementation resources: Geometric programming interface*.

The objective of this Standard is to provide an application programming interface that enables an application program to generate geometric models that are independent of the target user system. The interface allows portability of programs that describe parametric shape representations of parts families held in an AS ISO 13584 parts library.

This Standard is Part 31 of AS ISO 13584, *Industrial automation systems and integration*, which is published in parts as follows:

Part 1: Overview and fundamental principles
Part 101: Geometrical view exchange protocol by parametric program
Part 20: Logical resource: Logical model of expressions
Part 24: Logical resource: Logical model of supplier library
Part 26: Logical resource: Information supplier identification
Part 31: Implementation resources: Geometric programming interface (this Standard)
Part 42: Description methodology: Methodology for structuring part families

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10303-42	Industrial automation systems and integration—Product data representation and exchange—Part 42: Integrated generic resources: Geometric and topological representation
10303-43	Industrial automation systems and integration—Product data representation and exchange—Part 43: Integrated resources: Representation structures
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10303.43	Industrial automation systems and integration—Product data representation and exchange, Part 43: Integrated resources: Representation structures
10303.46	Industrial automation systems and integration—Product data representation and exchange, Part 46: Integrated generic resources: Visual presentation

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INTRODUCTION

ISO 13584 is an International Standard for the computer-interpretable representation and exchange of part library data. The objective is to provide a neutral mechanism capable of transferring parts library data, independent of any application that is using a parts library data system. The nature of this description makes it suitable not only for the exchange of files containing parts, but also as a basis for implementing and sharing databases of parts library data.

This International Standard is organized as a series of parts, each published separately. The parts of ISO 13854 fall into one of the following series: conceptual descriptions, logical resources, implementation resources, description methodology, conformance testing, view exchange protocol, and standardised content. The series are described in ISO 13584-1. This part of ISO 13584 is a member of the (implementation resources) series .

This part of ISO 13584 specifies an interface to enable the creation of product model data inside an user system from an application program that is independent of the target user system.

This interface may be used, outside the context of standardized parts library data, to permit the development of application programs that are independent of the target CAD system. In the context of ISO 10303, this interface may be implemented on the top of the SDAI interface to provide constrained geometry construction facilities.

In the context of parts library data, conforming to the ISO 13584 Standard series, the product model data creation process is an application program provided by parts library suppliers, that creates geometric model inside the user system. The interface ensures its independancy from the target user system.

AUSTRALIAN STANDARD

Industrial automation systems and integration - Parts Library - Part 31: Implementation resources: Geometric programming interface

1 Scope and field of application

This part of ISO 13584 specifies an application programming interface that enables an application program to generate geometric models that are independent of the target user system. The interface allows portability of programs that describe parametric shape representations of parts families held in an ISO 13584 parts library.

The following are within the scope of this International Standard:

— programs to generate geometric representations within a modelling system that are independent of the target system,

— programs that specify geometric representations that are created through constraint-based geometric definitions,

— programs that structure geometric representations created independently of the target system,

— programs that specify presentation style attributes for symbolic visualisation of representations created,

— programs that support technical drawing standard conventions for shape representation, including a 2D hidden line mechanism.

The following are outside the scope of this International Standard:

— The precise control of the image to be displayed on the receiving system devices,

— The precise definition of the data that shall be created on the receiving system,

— The storage of a parametric model on the receiving system.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO 13584. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 13584 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references the latest edition of the publication referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 128: 1982	*Technical drawings - General principles of presentation.*
ISO 1539: 1991	*Information technology - Programming languages - FORTRAN.*
ISO/IEC 8824-1 [1)]	*Information technology - Abstract Syntax Notation One (ASN.1): Specification of basic notation.*

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