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Australian Standard™

Industrial automation systems and integration—Parts library

Part 101: Geometrical view exchange protocol by parametric program

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Australian Standard™

Industrial automation systems and integration—Parts library

Part 101: Geometrical view exchange protocol by parametric program

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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 13584-101:2003, *Industrial automation systems and integration—Parts library,* Part 101*: Geometrical view exchange protocol by parametric program*.

The objective of this Standard is to provide a representation category called *basic_geometry.* This representation category captures the generic concepts of the shape of a part. This representation category may be associated with any of the items defined in a parts library.

This Standard is Part 101 of AS ISO 13584, *Industrial automation systems and integration—Parts library*, which is published in parts as follows:

Part 1: Overview and fundamental principles
Part 101: Geometrical view exchange protocol by parametric program (this Standard)
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
Part 42: Description methodology: Methodology for structuring part families

The terms ‘normative’ and ‘informative’ are used to define the application of the annex to which they apply. A normative annex is an integral part of a standard, whereas an informative annex is only for information and guidance.

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(a) Its number appears on the cover and title page while the international standard number appears only on the cover

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Reference to International Standard		*Australian Standard*	
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10646-1	Information technology; Universal Multiple-Octet Coded Character Set (UCS); Part 1: Architecture and basic multilingual plane	4189.1	Information technology; Universal Multiple-Octet Coded Character Set (UCS); Part 1: Architecture and basic multilingual plane
ISO		AS	
10303-1	Industrial automation systems and integration—Product data representation and exchange—Part 1: Overview and fundamental principles	10303.1	Industrial automation systems and integration—Product data representation and exchange, Part 1: Overview and fundamental principles

10303-11	Industrial automation systems and integration—Product data representation and exchange—Part 11: Description methods: The EXPRESS language reference manual
10303-31	Industrial automation systems and integration—Product data representation and exchange—Part 31: Conformance testing methodology and framework: General concepts
10303-42	Industrial automation systems and integration—Product data representation and exchange—Part 42: Integrated generic resources: Geometric and topological representation
13584-1	Industrial automation systems and integration—Parts library—Part 1: Overview and fundamental principles
13584-24	Industrial automation systems and integration—Parts library—Part 24: Logical resource: Logical model of supplier library
13584-26	Industrial automation systems and integration—Parts library—Part 26: Logical resource: Information supplier identification
13584-31	Industrial automation systems and integration—Parts library—Part 31: Implementation resources: Geometric programming interface
13584-42	Industrial automation systems and integration—Parts library—Part 42: Description methodology: Methodology for structuring part families

10303.11	Industrial automation systems and integration—Product data representation and exchange, Part 11: Description methods: The EXPRESS language reference manual
10303.31	Industrial automation systems and integration—Product data representation and exchange, Part 31: Conformance testing methodology and framework: General concepts
10303.42	Industrial automation systems and integration—Product data representation and exchange, Part 42: Integrated generic resources: Geometric and topological representation
13584.1	Industrial automation systems and integration—Parts library, Part 1: Overview and fundamental principles
13584.24	Industrial automation systems and integration—Parts library, Part 24: Logical resource: Logical model of supplier library
13584.26	Industrial automation systems and integration—Parts library, Part 26: Logical resource: Information supplier identification
13584.31	Industrial automation systems and integration—Parts library, Part 31: Implementation resources: Geometric programming interface
13584.42	Industrial automation systems and integration—Parts library, Part 42: Description methodology: Methodology for structuring part families

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INTRODUCTION

ISO 13584 is an International Standard for the computer-interpretable representation and exchange of parts 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.

ISO 13584 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 standardized content. The series are described in ISO 13584-1. This part of ISO 13584 is a member of the view exchange protocol series.

A view exchange protocol specifies how a particular representation category of the items described in a parts library may be exchanged in a library exchange context. It defines the identification of the representation category, the means to be used to exchange representations that belong to this representation category, the implementation resources that shall be available on any implementation that claims conformance to this view exchange protocol, and the standard data that shall be recognized by any implementation that claims conformance to this view exchange protocol.

This part of ISO 13584 specifies how geometric representations of the items described in a parts library may be exchanged by means of parametric FORTRAN programs based on the application programming interface specified in ISO 13584-31:1999, or, by case of separate agreement between the sender and the receiver, by means of non-standardized parametric formats.

AUSTRALIAN STANDARD

Industrial automation systems and integration – Parts library – Part 101: Geometrical view exchange protocol by parametric program

1 Scope

This part of ISO 13584 specifies a representation category called *basic_geometry*. This representation category captures the generic concepts of the shape of a part. This representation category may be associated with any of the items defined in a parts library. This part of ISO 13584 also defines how representations that belong to this representation category may be exchanged within a library exchange context by means of FORTRAN programs compliant with ISO 13584-31:1999.

The following are within the scope of this part ISO 13584:

— the definition of the *basic_geometry* representation category and the mechanisms to be used to reference it;

— the properties to be used to characterize a particular representation within the *basic_geometry* representation category;

— the exchange format to be used for the library external files that describe the *basic_geometry* representations of classes of items described in a parts library by means of FORTRAN programs based on the application programming interface specified in ISO 13584-31:1999;

— the mechanism to be used, by case of separate agreement between the sender and the receiver, to reference external files that describe the *basic_geometry* representations of classes of items described in a parts library by means of formats not specified in ISO 13584;

— the implementation resources to be supported on any implementation that claims conformance to this part of ISO 13584;

— the dictionary entries to be supported by any implementation that claims conformance to this part of ISO 13584;

— the standard data to be recognized by any implementation that claims conformance to this part of ISO 13584.

The following is outside the scope of this part of ISO 13584:

— the structure and exchange format of a library delivery file that includes references to the representation category defined in this part of ISO 13584, and/or to the library external files whose exchange format is specified.

NOTE 1 The structure of a library delivery file is defined by a library integrated information model specified in one of the logical resource series parts of ISO 13584.

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