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ISO 19125-1:2004
Reconfirmed 2016

AS/NZS ISO 19125.1:2004

Australian/New Zealand Standard™

Geographic information—Simple feature access

Part 1: Common architecture

STANDARDS AUSTRALIA

STANDARDS NEW ZEALAND
Paerewa Aotearoa

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee IT-004, Geographical Information. It was approved on behalf of the Council of Standards Australia on 13 October 2004 and on behalf of the Council of Standards New Zealand on 1 October 2004.
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The following are represented on Committee IT-004:

ACT Department of Urban Services
ANZLIC – the Spatial Information Council
Association of Aerial Surveyors Australia
Association of Crown Research Institutes New Zealand
Australasian Fire Authorities Council
Australasian Urban and Regional Information Systems Association
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Standards are living documents which reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued. Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments which may have been published since the Standard was purchased.

Detailed information about joint Australian/New Zealand Standards can be found by visiting the Standards Web Shop at www.standards.com.au or Standards New Zealand web site at www.standards.co.nz and looking up the relevant Standard in the on-line catalogue.

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We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Please address your comments to the Chief Executive of either Standards Australia International or Standards New Zealand at the address shown on the back cover.

This Standard was issued in draft form for comment as DR 04271.

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

RECONFIRMATION

OF
AS/NZS ISO 19125.1:2004
Geographic information—Simple feature access
Part 1: Common architecture

RECONFIRMATION NOTICE

Technical Committee IT-004 has reviewed the content of this publication and in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

Certain documents referenced in the publication may have been amended since the original date of publication. Users are advised to ensure that they are using the latest versions of such documents as appropriate, unless advised otherwise in this Reconfirmation Notice.

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The following are represented on Technical Committee IT-004:

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NOTES

Australian/New Zealand Standard™

Geographic information—Simple feature access

Part 1: Common architecture

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee IT-004, Geographical Information.

This Standard is identical with, and has been reproduced from, ISO 19125-1:2004, *Geographic information—Simple feature access,* Part 1: *Common architecture*.

The objective of this Standard is to provide a common architecture and define terms to use within the architecture.

This Standard is Part 1 of AS/NZS ISO 19125, *Geographic information—Simple feature access*, which is published in parts as follows:

Part 1: Common architecture (this Standard)
Part 2: SQL option

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.

As this Standard is reproduced from an international standard, the following applies:

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

(b) In the source text 'this International Standard' should read 'this Australian/New Zealand Standard'.

(c) A full point substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards, as follows:

Reference to International Standard		*Australian/New Zealand Standard*	
ISO		AS/NZS	
19111	Geographic information—Spatial referencing by coordinates	19111	Geographic information—Spatial referencing by coordinates

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INTRODUCTION

This part of ISO 19125 describes the common architecture for simple feature geometry. The simple feature geometry object model is Distributed Computing Platform neutral and uses UML notation. The base Geometry class has subclasses for Point, Curve, Surface and GeometryCollection. Each geometric object is associated with a Spatial Reference System, which describes the coordinate space in which the geometric object is defined.

The extended Geometry model has specialized 0, 1 and 2-dimensional collection classes named MultiPoint, MultiLineString and MultiPolygon for modelling geometries corresponding to collections of Points, LineStrings and Polygons, respectively. MultiCurve and MultiSurface are introduced as abstract superclasses that generalize the collection interfaces to handle Curves and Surfaces.

The attributes, methods and assertions for each Geometry class are described in Figure 1 in 6.1.1. In describing methods, *this* is used to refer to the receiver of the method (the object being messaged).

The SFA COM function “signatures” may use a different notation from SFA SQL. COM notation is more familiar for COM programmers. However, UML notation is used throughout this part of ISO 19125. There may also be methods used in this International Standard that differ from one part to another. Where this is the case, the differences are shown within the part.

This part of ISO 19125 implements a profile of the spatial schema described in ISO 19107:2003, *Geographic information — Spatial schema*. Annex A provides a detailed mapping of the schema in this part of ISO 19125 with the schema described in ISO 19107:2003.

AUSTRALIAN/NEW ZEALAND STANDARD

Geographic information — Simple feature access —

Part 1:
Common architecture

1 Scope

This part of ISO 19125 establishes a common architecture and defines terms to use within the architecture.

This part of ISO 19125 does not attempt to standardize and does not depend upon any part of the mechanism by which Types are added and maintained, including the following:

a) syntax and functionality provided for defining types;

b) syntax and functionality provided for defining functions;

c) physical storage of type instances in the database;

d) specific terminology used to refer to User Defined Types, for example UDT.

This part of ISO 19125 does standardize names and geometric definitions for Types for Geometry.

This part of ISO 19125 does not place any requirements on how to define the Geometry Types in the internal schema nor does it place any requirements on when or how or who defines the Geometry Types.

2 Conformance

In order to conform to this part of ISO 19125, an implementation shall satisfy the requirements of one or more test suites specified in the other parts of ISO 19125.

3 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 19107:2003, *Geographic information — Spatial schema*

ISO 19111:2003, *Geographic information — Spatial referencing by coordinates*

4 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

4.1
boundary
set that represents the limit of an entity