

Australian/New Zealand Standard™

**Geographic information—
Reference model**

AS/NZS ISO 19101:2003

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 7 March 2003 and on behalf of the Council of Standards New Zealand on 18 March 2003. It was published on 12 May 2003.

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Australian/New Zealand Standard™

Geographic information— Reference model

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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 19101:2002, *Geographic information—Reference model*, one of the ISO 19100 series of Standards on geographical information.

The objective of this Standard is to define the framework for the methods and contents of the AS/NZS ISO 19100 series of Standards in a way that will enable the universal usage of digital geographic information.

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

- (a) Its number does not appear on each page of text and its identity is shown only on the cover and title page.
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The term ‘informative’ has been used in this Standard to define the application of the annex to which it applies. An ‘informative’ annex is only for information and guidance.

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INTRODUCTION

Every comprehensive standardization effort needs a reference model to ensure an integrated and consistent approach. This International Standard is a guide to structuring geographic information standards in a way that will enable the universal usage of digital geographic information. This reference model describes the overall requirements for standardization and the fundamental principles that apply in developing and using standards for geographic information. In describing these requirements and principles, this reference model provides a vision of standardization in which geographic information can be integrated with existing and emerging digital information technologies and applications. This International Standard is intended to be used by information system analysts, program planners and developers of geographic information standards that are related to geographic information standards, as well as others in order to understand the basic principles of this series of standards and the overall requirements for standardization of geographic information.

Beyond the needs within traditional applications of digital geographic information, there is a growing recognition among users of information technology that indexing by location is a fundamental way to organize and to use digital data. Increasingly, digital data from a wide variety of sources is being referenced to locations for use in a diversity of applications. Consequently, there is an increasing need for standardization of geographic information and services for processing this information. To meet this need, the ISO 19100 series standardizes relevant aspects of the description and management of geographic information and geographic information services. This standardization will:

- increase the understanding and usage of geographic information;
- increase the availability, access, integration and sharing of geographic information;
- promote the efficient, effective and economic use of digital geographic information and associated hardware and software systems;
- contribute to a unified approach to addressing global ecological and humanitarian problems.

To achieve these goals, standardization of geographic information in the ISO 19100 series is based on the integration of the concepts of geographic information with those of information technology. The development of standards for geographic information must consider the adoption or adaptation of generic information technology standards whenever possible. It is only when this cannot be done that geographic information standards need to be developed.

This International Standard identifies a generic approach to structuring the ISO 19100 series of standards. This reference model uses concepts obtained from the ISO/IEC Open Systems Environment (OSE) approach for determining standardization requirements described in ISO/IEC TR 14252, the IEC Open Distributed Processing (ODP) Reference Model described in ISO/IEC 10746-1 and other relevant ISO standards and technical reports. This International Standard does not prescribe any specific products or techniques for implementing geographic information systems.

AUSTRALIAN/NEW ZEALAND STANDARD

Geographic information — Reference model

1 Scope

This International Standard defines the framework for standardization in the field of geographic information and sets forth the basic principles by which this standardization takes place.

This framework identifies the scope of the standardization activity being undertaken and the context in which it takes place. The framework provides the method by which what is to be standardized can be determined and describes how the contents of the standards are related.

Although structured in the context of information technology and information technology standards, this International Standard is independent of any application development method or technology implementation approach.

2 Conformance

General conformance and testing requirements for the ISO 19100 series of geographic information standards are described in ISO 19105. Specific conformance requirements are described in individual standards in the ISO 19100 series.

3 Normative reference

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

ISO/IEC 19501-1:—¹⁾, *Information technology — Unified Modeling Language (UML) — Part 1: Specification*

4 Terms and definitions

For the purposes of this International Standard, the following terms and definitions apply. Sources of term definitions not defined in this International Standard are provided.

NOTE Throughout this document, certain terms are italicized. These terms are defined either in this clause or in the terms and definitions clause of another part of ISO 19100, as indicated.

4.1 application

manipulation and processing of data in support of user requirements

4.2 application schema

conceptual schema for data required by one or more applications

1) To be published.