AS/NZS ISO 19103:2006
ISO/TS 19103:2005

AS/NZS ISO 19103:2006

Australian/New Zealand Standard™

Geographic information—Conceptual schema language

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee IT-004, Geographical Information/Geomatics. It was approved on behalf of the Council of Standards Australia on 11 January 2006 and on behalf of the Council of Standards New Zealand on 27 January 2006.
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Geographic information—Conceptual schema language

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PREFACE

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

This Standard is identical with, and has been reproduced from ISO/TS 19103:2005, *Geographic information—Conceptual schema language*.

The objective of this Standard is to provide system designers and analysts with a profile of the Unified Modeling Language (UML) for use with geographic information, and to provide guidelines on how UML should be used to create standardized geographic information and service models.

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 Technical Specification' should read 'this Australian/New Zealand'.

(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 ISO	
19101	Geographic information—Reference model	19101	Geographic information—Reference model
19501	Information technology—Open Distributed Processing—Unified Modeling Language (UML) Version 1.4.2	—	

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INTRODUCTION

This Technical Specification of the ISO geographic information standards is concerned with the adoption and use of a conceptual schema language (CSL) for developing computer-interpretable models, or schemas, of geographic information. Standardization of geographic information requires the use of a formal CSL to specify unambiguous schemas that can serve as a basis for data interchange and the definition of interoperable services. An important goal of the ISO geographic information standards is to create a framework in which data interchange and service interoperability can be realized across multiple implementation environments. The adoption and consistent use of a CSL to specify geographic information is of fundamental importance in achieving this goal.

There are two aspects to this Technical Specification. First, a CSL must be selected that meets the requirements for rigorous representation of geographic information. This Technical Specification identifies the combination of the Unified Modeling Language (UML) static structure diagram with its associated Object Constraint Language (OCL) and a set of basic type definitions as the conceptual schema language for specification of geographic information. Secondly, this Technical Specification provides guidelines on how UML should be used to create geographic information and service models that are a basis for achieving the goal of interoperability.

One goal of the ISO geographic information standards using UML models is that they will provide a basis for mapping to encoding schemas as defined in ISO 19118, as well as a basis for creating implementation specifications for implementation profiles for various environments.

AUSTRALIAN/NEW ZEALAND STANDARD

Geographic information — Conceptual schema language

1 Scope

This Technical Specification provides rules and guidelines for the use of a conceptual schema language within the ISO geographic information standards. The chosen conceptual schema language is the Unified Modeling Language (UML).

This Technical Specification provides a profile of the Unified Modeling Language (UML) for use with geographic information. In addition, it provides guidelines on how UML should be used to create standardized geographic information and service models.

2 Conformance

Any conceptual schema written for a specification, including a profile or functional standard, that claims conformance with this Technical Specification shall pass all of the requirements described in the abstract test suite in Annex A. Non-UML schemas shall be considered conformant if there is a well-defined mapping from a model in the source language into an equivalent model in UML and that this model in UML is conformant.

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 19101:2002, *Geographic Information — Reference model*

ISO/IEC 19501:2005, *Information technology — Open Distributed Processing — Unified Modeling Language (UML) Version 1.4.2*

4 Terms, definitions and abbreviations

4.1 ISO/TS 19103 terms

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

4.1.1
application
manipulation and processing of data in support of user requirements

[ISO 19101]

4.1.2
application schema
conceptual schema for data required by one or more **applications**

[ISO 19101]

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