

Australian/New Zealand Standard™

**Geographic information—Data quality  
measures**



## **AS/NZS ISO 19138:2008**

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 25 July 2008 and on behalf of the Council of Standards New Zealand on 21 July 2008.  
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## PREFACE

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

The objective of this Standard is to define a set of data quality measures. This can be used when reporting data quality for the data quality sub-elements identified in ISO 19113.

This Standard is identical with, and has been reproduced from ISO/TS 19138:2006, *Geographic information—Data quality measures*.

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

<i>Reference to International Standard</i>		<i>Australian/New Zealand Standard</i>	
ISO		AS/NZS ISO	
19103	Geographic information— Conceptual schema language	19103	Geographic information— Conceptual schema language
19113	Geographic information—Quality principles	19113	Geographic information—Quality principles
19115	Geographic information—Metadata	19115	Geographic information—Metadata
19135	Geographic information— Procedures for item registration	19135	Geographic information— Procedures for item registration

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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## INTRODUCTION

Knowledge of the quality of geographic data is often crucial for the application of the data, as different users and different applications often have different data quality requirements. A user of geographic data may have multiple datasets from which to choose. Therefore, it is necessary to compare the quality of the datasets to determine which best fulfils the requirements of the user. To facilitate such comparisons, it is essential that the results of the quality reports are expressed in a comparable way and that there is a common understanding of the data quality measures that have been used. These data quality measures provide descriptors of the quality of geographic data through comparison with the universe of discourse. The use of incompatible measures makes data quality comparisons impossible to perform.

Data quality needs to be reported by the producer and evaluated by the user against his or her requirements for different criteria and data quality measures. It is essential that reported quality for a dataset contains the quality measurements that may be of interest to a potential user of the dataset, and that the metrics used to determine the quality are reported and available to the user.

ISO 19113 establishes the principles for the description of geographic data quality and specifies components for reporting quality information. Procedures for the evaluation of geographic data quality are described in ISO 19114.

The objective of this Technical Specification is to guide the producer in choosing the right data quality measures for data quality reporting, and the user in the evaluation of the usefulness of a dataset by standardizing the components and structures of data quality measures and by defining commonly used data quality measures.

## AUSTRALIAN/NEW ZEALAND STANDARD

**Geographic information — Data quality measures****1 Scope**

This Technical Specification defines a set of data quality measures. These can be used when reporting data quality for the data quality subelements identified in ISO 19113. Multiple measures are defined for each data quality subelement, and the choice of which to use will depend on the type of data and its intended purpose.

The data quality measures are structured so that they can be maintained in a register established in conformance with ISO 19135.

This Technical Specification does not attempt to describe every possible data quality measure, only a set of commonly used ones.

**2 Conformance**

Any set of data quality measures claiming conformance with this Technical Specification shall pass all of the conditions specified in the abstract test suite (Annex A).

**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/TS 19103:2005, *Geographic information — Conceptual schema language*

ISO 19113:2002, *Geographic information — Quality principles*

ISO 19115:2003, *Geographic information — Metadata*

ISO 19135:2005, *Geographic information — Procedures for item registration*

**4 Terms and definitions**

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

**4.1****correctness**

correspondence with the universe of discourse

**4.2****data quality basic measure**

generic data quality measure used as a basis for the creation of specific data quality measures

NOTE Data quality basic measures are abstract data types. They cannot be used directly when reporting data quality.