
**Geographic information — Spatial
referencing by geographic identifiers**

*Information géographique — Système de références spatiales par
identificateurs géographiques*



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 19112 was prepared by Technical Committee ISO/TC 211, *Geographic information/Geomatics*.

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Introduction

Geographic information contains geospatial references that relate the features and information represented in the data or text to positions in geographic space. Spatial references fall into two categories:

- a) those using coordinates;
- b) those using geographic identifiers.

This International Standard deals only with spatial referencing by geographic identifiers. This type of spatial reference is sometimes called "indirect". Spatial referencing by coordinates is the subject of ISO 19111.

Spatial reference systems using geographic identifiers are not based explicitly on coordinates but on a relationship with a location defined by a geographic feature or features. The relationship of the position to the feature may be as follows:

- a) containment, where the position is within the geographic feature, for example in a country;
- b) based on local measurements, where the position is defined relative to a fixed point or points in the geographic feature or features, for example at a given distance along a street from a junction with another street;
- c) loosely related, where the position has a fuzzy relationship with the geographic feature or features, for example adjacent to a building or between two buildings.

The purpose of this International Standard is to specify ways to define and describe systems of spatial references using geographic identifiers. However, it only covers the definition and recording of the referencing feature, and does not consider the forms of the relationship of the position relative to that feature.

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Geographic information — Spatial referencing by geographic identifiers

1 Scope

This International Standard defines the conceptual schema for spatial references based on geographic identifiers. It establishes a general model for spatial referencing using geographic identifiers, defines the components of a spatial reference system and defines the essential components of a gazetteer.

Spatial referencing by coordinates is addressed in ISO 19111. However, a mechanism for recording complementary coordinate references is included.

This International Standard enables producers of data to define spatial reference systems using geographic identifiers and assists users in understanding the spatial references used in datasets. It enables gazetteers to be constructed in a consistent manner and supports the development of other standards in the field of geographic information.

This International Standard is applicable to digital geographic data, and its principles may be extended to other forms of geographic data such as maps, charts and textual documents.

2 Conformance

Two classes of conformance are defined for this International Standard:

- any spatial reference system for which conformance with this document is claimed shall pass all the requirements described in the abstract test suite given in Clause A.1.
- any gazetteer for which conformance with this document is claimed shall pass all the requirements described in the abstract test suite given in Clause A.2.

The definition of an abstract test suite is given in ISO 19105.

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 19105:2000, *Geographic information — Conformance and testing*

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

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

ISO 19115:2003, *Geographic information — Metadata*