

Australian/New Zealand Standard™

**Standard representation of latitude,
longitude and altitude for geographic
point locations**



AS/NZS ISO 6709:2008

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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The following are represented on Committee IT-004:

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ANZLIC - the Spatial Information Council
Australian Antarctic Division
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Australian Key Centre In Land Information Studies
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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 provide geographic point location data formats which are universally interpretable and that allow unique identification of points on, above or below the earth's surface for the representation of latitude, longitude and altitude for use in data interchange. This Standard provides a variable-length format.

This Standard is identical with, and has been reproduced from ISO 6709:1983, *Standard representation of latitude, longitude and altitude for geographic point locations*.

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.

AUSTRALIAN/NEW ZEALAND STANDARD

Standard representation of latitude, longitude and altitude for geographic point locations

0 Introduction

Efficient interchange of geographic point location data requires formats which are universally interpretable and which allow unique identification of points on, above or below the earth's surface. Users in various disciplines may have different requirements. This is exemplified by the use of degrees and decimal degrees in addition to the traditional degrees, minutes and seconds for recording latitude and longitude. Users may also require different degrees of precision and may use latitude and longitude without altitude.

This International Standard provides a variable-length format which has the flexibility to cover these various requirements.

Use of this International Standard will :

- a) reduce the cost of interchange of data;
- b) reduce the delay in converting non-standard coding structures in preparation for interchange by providing advance knowledge of the standard interchange format.

1 Scope and field of application

This International Standard specifies a variable-length format for the representation of latitude, longitude and altitude for use in data interchange. The representation of altitude is optional and its presence or absence is implicit in the format.

This International Standard allows the use of normal sexagesimal notations involving degrees, minutes and seconds as well as various combinations of sexagesimal and decimal notations — degrees and decimal degrees; degrees, minutes and decimal minutes; degrees, minutes, seconds and decimal seconds. It makes use of the numeric characters 0 to 9, the graphic characters plus (+), minus (−), full stop (.) and comma (,).

This International Standard does not specify the use of fixed-length field formats which, although they may be consistent with the format in this International Standard, require prior agreement between parties in the data interchange.

This International Standard does not require special internal procedures, file organization techniques, storage medium, languages, etc., to be used in its implementation.

2 Requirements for the representation of latitude, longitude and altitude

2.1 Latitude

2.1.1 Latitudes north of the equator shall be designated by use of the plus sign (+), latitudes south of the equator shall be designated by use of the minus sign (−). The equator shall be designated by use of the plus sign (+).

2.1.2 The first two digits of the latitude string shall represent degrees. Subsequent digits shall represent minutes, seconds or decimal fractions according to the following convention in which the decimal mark (full stop or comma) indicates the transition from the sexagesimal system to the decimal system :

Degrees and decimal degrees :

DD.DD

Degrees, minutes and decimal minutes :

DDMM.MMM

Degrees, minutes, seconds and decimal seconds :

DDMMSS.SS