



**NSAI**  
Standards

Irish Standard  
I.S. EN ISO 19157:2013&A1:2018

# Geographic information - Data quality (ISO 19157:2013)

## I.S. EN ISO 19157:2013&A1:2018

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

EN ISO 19157:2013/A1:2018

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*This document is based on:*

EN ISO 19157:2013

*Published:*

2013-12-18

*This document was published under the authority of the NSAI and comes into effect on:*

2018-02-25

ICS number:

35.240.70

NOTE: If blank see CEN/CENELEC cover page

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## National Foreword

I.S. EN ISO 19157:2013&A1:2018 is the adopted Irish version of the European Document EN ISO 19157:2013, Geographic information - Data quality (ISO 19157:2013)

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EUROPEAN STANDARD

**EN ISO 19157:2013/A1**

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 2018

ICS 35.240.70

English Version

**Geographic information - Data quality - Amendment 1:  
Describing data quality using coverages (ISO  
19157:2013/Amd 1:2018)**

Information géographique - Qualité des données -  
Amendement 1: Décrire la qualité des données en  
utilisant les couvertures (ISO 19157:2013/Amd  
1:2018)

Geoinformation - Datenqualität - Änderung 1 (ISO  
19157:2013/Amd 1:2018)

This amendment A1 modifies the European Standard EN ISO 19157:2013; it was approved by CEN on 14 February 2018.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This amendment exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

**EN ISO 19157:2013/A1:2018 (E)**

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## **European foreword**

This document (EN ISO 19157:2013/A1:2018) has been prepared by Technical Committee ISO/TC 211 "Geographic information/Geomatics" in collaboration with Technical Committee CEN/TC 287 "Geographic Information" the secretariat of which is held by BSI.

This Amendment to the European Standard EN ISO 19157:2013 shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 2018, and conflicting national standards shall be withdrawn at the latest by August 2018.

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

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## **Endorsement notice**

The text of ISO 19157:2013/Amd 1:2018 has been approved by CEN as EN ISO 19157:2013/A1:2018 without any modification.

EUROPEAN STANDARD

**EN ISO 19157**

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2013

ICS 35.240.70

Supersedes EN ISO 19113:2005, EN ISO 19114:2005

English Version

## Geographic information - Data quality (ISO 19157:2013)

Information géographique - Qualité des données (ISO  
19157:2013)

Geoinformation - Datenqualität (ISO 19157:2013)

This European Standard was approved by CEN on 9 November 2013.

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**EN ISO 19157:2013 (E)**

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## **Foreword**

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### **Endorsement notice**

The text of ISO 19157:2013 has been approved by CEN as EN ISO 19157:2013 without any modification.

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# INTERNATIONAL STANDARD

# ISO 19157

First edition  
2013-12-15

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## Geographic information — Data quality

*Information géographique — Qualité des données*



Reference number  
ISO 19157:2013(E)

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## ISO 19157:2013(E)



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Published in Switzerland

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## **ISO 19157:2013(E)**

### **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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 211, Geographic information/Geomatics

This edition of ISO 19157:2013 cancels and replaces ISO/TS 19138:2006, ISO 19114:2003 and ISO 19113:2002, which have been technically revised.

## Introduction

Geographic data are increasingly being shared, interchanged and used for purposes other than their producers' intended ones. Information about the quality of available geographic data are vital to the process of selecting a data set in that the value of data are directly related to its quality. A user of geographic data may have multiple data sets from which to choose. Therefore, it is necessary to compare the quality of the data sets to determine which best fulfils the requirements of the user.

The purpose of describing the quality of geographic data is to facilitate the comparison and selection of the data set best suited to application needs or requirements. Complete descriptions of the quality of a data set will encourage the sharing, interchange and use of appropriate data sets. Information on the quality of geographic data allows a data producer to evaluate how well a data set meets the criteria set forth in its product specification and assists data users in evaluating a product's ability to satisfy the requirements for their particular application. For the purpose of this evaluation, clearly defined procedures are used in a consistent manner.

To facilitate 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. This International Standard standardizes the components and structures of data quality measures and defines commonly used data quality measures.

This International Standard recognizes that a data producer and a data user may view data quality from different perspectives. Conformance quality levels can be set using the data producer's product specification or a data user's data quality requirements. If the data user requires more data quality information than that provided by the data producer, the data user can follow the data producer's data quality evaluation process flow to get the additional information. In this case the data user requirements are treated as a product specification for the purpose of using the data producer process flow.

The objective of this International Standard is to provide principles for describing the quality for geographic data and concepts for handling quality information for geographic data, and a consistent and standard manner to determine and report a data set's quality information. It aims also to provide guidelines for evaluation procedures of quantitative quality information for geographic data.





# Geographic information — Data quality

## 1 Scope

This International Standard establishes the principles for describing the quality of geographic data. It

- defines components for describing data quality;
- specifies components and content structure of a register for data quality measures;
- describes general procedures for evaluating the quality of geographic data;
- establishes principles for reporting data quality.

This International Standard also defines a set of data quality measures for use in evaluating and reporting data quality. It is applicable to data producers providing quality information to describe and assess how well a data set conforms to its product specification and to data users attempting to determine whether or not specific geographic data are of sufficient quality for their particular application.

This International Standard does not attempt to define minimum acceptable levels of quality for geographic data.

## 2 Conformance

Any product claiming conformance to this International Standard shall pass all the requirements described in the abstract test suite presented in [Annex A](#) as follows:

- a) A data quality evaluation process shall pass the tests outlined in [A.1](#);
- b) Data quality metadata shall pass the tests outlined in [A.2](#) and [A.3](#);
- c) A standalone quality report shall pass the tests outlined in [A.4](#);
- d) A data quality measure shall pass the tests outlined in [A.5](#).

## 3 Normative references

The following referenced documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 19108:2002, *Geographic information — Temporal schema*

ISO 19115-1:2014, *Geographic information — Metadata — Part 1: Fundamentals*<sup>1)</sup>

ISO 19115-2:2009, *Geographic information — Metadata — Part 2: Extensions for imagery and gridded data*

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

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