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STN	**Geografické informácie Služby na určovanie polohy (ISO 19116: 2019)**	**STN EN ISO 19116** 01 9333

Geographic information - Positioning services (ISO 19116:2019)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 05/20

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EUROPEAN STANDARD

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EUROPÄISCHE NORM

EN ISO 19116

December 2019

ICS 35.240.70

Supersedes EN ISO 19116:2006

English Version

Geographic information - Positioning services (ISO 19116:2019)

Information géographique - Services de positionnement (ISO 19116:2019)

Geoinformation - Positionierung (ISO 19116:2019)

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Ref. No. EN ISO 19116:2019 E

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European foreword

This document (EN ISO 19116:2019) 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 European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2020, and conflicting national standards shall be withdrawn at the latest by June 2020.

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 19116:2019 has been approved by CEN as EN ISO 19116:2019 without any modification.

INTERNATIONAL STANDARD

ISO 19116

Second edition
2019-12

Geographic information — Positioning services

Information géographique — Services de positionnement

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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.

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).

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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 of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

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

This second edition cancels and replaces the first edition (ISO 19116:2004), which has been technically revised.

The main changes compared to the previous edition are as follows.

— Device specific definitions have been removed from the model and normative body of the document. These have been clarified and reformatted in Annex D.

— Constructs from withdrawn standards ISO 19113, ISO 19114, and ISO 19115 have been updated where necessary to ISO 19115-1 and ISO 19157. References to these new standards are carried out using approved methods.

— Terminology entries from the first edition were updated and harmonized with other current standards in ISO/TC 211. As per ISO/IEC Directives, Part 2, 2018, unused terms have been removed from this edition.

— Constructs from ISO 19111 have been updated. References to the revised ISO 19111:2019 document are carried out using approved methods.

— A new, convenient yet unobtrusive, set of constructs for determining the reliability of a positioning result have been added to the model, in Clause 8.

— Based on the concepts related to the model, conformance with the other standards, and separation of the technology specific content from the abstract model, all UML models have been updated.

— Original requirements “drafted as normative *shall* statements” were rechecked for consistency with the model. Where necessary the requirements were revised or retained as regular text.

— Significant editorial revisions have been carried out, clarifying the structure of the document, correction of errors, and following current ISO/IEC Directives, Part 2 for drafting specifications.

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In accordance with the ISO/IEC Directives, Part 2, 2018, *Rules for the structure and drafting of International Standards*, in International Standards the decimal sign is a comma on the line. However, the General Conference on Weights and Measures (Conférence Générale des Poids et Mesures) at its meeting in 2003 passed unanimously the following resolution:

"The decimal marker shall be either a point on the line or a comma on the line."

In practice, the choice between these alternatives depends on customary use in the language concerned. In the technical areas of geodesy and geographic information it is customary for the decimal point always to be used, for all languages. That practice is used throughout this document.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Introduction

Positioning services are among the processing services identified in ISO 19119:2016. Processing services include services that are computationally oriented and operate upon the elements from the model domain, rather than being directly integrated in the model domain itself. This document defines and describes the positioning service.

Positioning services employ a wide variety of technologies that provide position and related information to a similarly wide variety of applications, as depicted in Figure 1. Although these technologies differ in many respects, there are important items of information that are common among them and serve the needs of these application areas, such as the position data, time of observation and its accuracy. Also, there are items of information that apply only to specific technologies and are sometimes required in order to make correct use of the positioning results, such as signal strength, geometry factors, and raw measurements. Therefore, this document includes both general data elements that are applicable to a wide variety of positioning services and technology specific elements that are relevant to particular technologies.

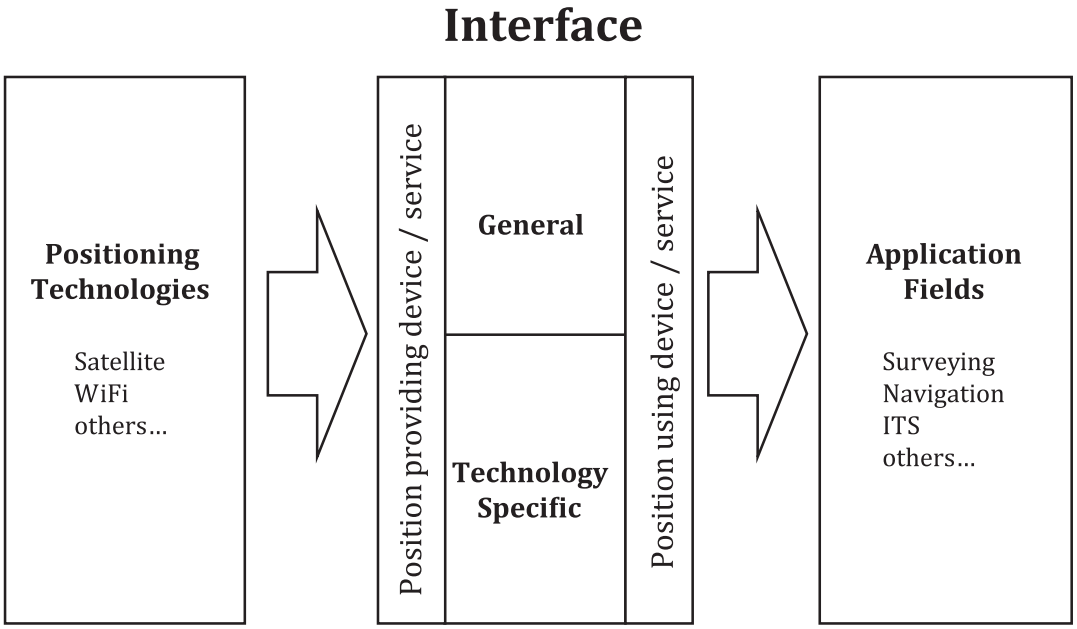

Figure 1 — Positioning services overview

Electronic positioning technology can measure the coordinates of a location on or near the Earth with great speed and accuracy, thereby allowing geographic information systems to be populated with any number of objects. However, the technologies for position determination have neither a common structure for expression of position information, nor common structures for expression of accuracy and reliability. The positioning services interface specified in this document provides data structures and operations that allow spatially oriented systems to employ positioning technologies with greater efficiency and interoperability.

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INTERNATIONAL STANDARD **ISO 19116:2019(E)**

Geographic information — Positioning services

1 Scope

This document specifies the data structure and content of an interface that permits communication between position-providing device(s) and position-using device(s) enabling the position-using device(s) to obtain and unambiguously interpret position information and determine, based on a measure of the degree of reliability, whether the resulting position information meets the requirements of the intended use.

A standardized interface for positioning allows the integration of reliable position information obtained from non-specific positioning technologies and is useful in various location-focused information applications, such as surveying, navigation, intelligent transportation systems (ITS), and location-based services (LBS).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 19103, *Geographic information — Conceptual schema language*

ISO 19107, *Geographic information — Spatial schema*

ISO 19111, *Geographic information — Referencing by coordinates*

ISO 19115-1, *Geographic information — Metadata — Part 1: Fundamentals*

ISO 19157, *Geographic information — Data quality*

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