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Second edition  
2011-10-15

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## Geographic information — Encoding

*Information géographique — Codage*



Reference number  
ISO 19118:2011(E)

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ISO copyright office  
Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.org](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

Published in Switzerland

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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 19118 was prepared by Technical Committee ISO/TC 211, *Geographic information/Geomatics*.

This second edition cancels and replaces the first edition (ISO 19118:2005), which has been technically revised.

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## Introduction

This International Standard specifies the requirements for defining encoding rules used for interchange of geographic data within the set of International Standards known as the "ISO 19100 series". An encoding rule allows geographic information defined by application schemas and standardized schemas to be coded into a system-independent data structure suitable for transport and storage. The encoding rule specifies the types of data being coded and the syntax, structure and coding schemes used in the resulting data structure. The resulting data structure can be stored on digital media or transferred using transfer protocols. It is intended that the data be read and interpreted by computers, but data can be in a form that is human readable.

The choice of one encoding rule for application-independent data interchange does not exclude application domains and individual nations from defining and using their own encoding rules that can be platform dependent or more effective with regard to data size or processing complexity. XML is a subset of ISO/IEC 8879 and has been chosen because it is independent of computing platform and interoperable with the World Wide Web.

This International Standard is divided into three logical sections. The requirements for creating encoding rules based on UML schemas are specified in Clauses 6 to 9. The requirements for creating encoding service are specified in Clause 10, and the requirements for XML-based encoding rules are specified in Annex A.

The XML-based encoding rule is intended for use as a neutral data interchange. It relies on the Extensible Markup Language (XML) and the ISO/IEC 10646 character set standards.

The geographic information standards are organized within the set of International Standards known as the "ISO 19100 series". The background and the overall structure of this series of International Standards and the fundamental description techniques are defined in ISO 19101, ISO/TS 19103 and ISO/TS 19104.

Users of this International Standard can develop application schemas to formally describe geographic information. An application schema is compiled by integrating elements from other standardized conceptual schemas (e.g. ISO 19107). How this integration takes place is described in ISO 19109. The set of International Standards known as the "ISO 19100 series" also defines a set of common services that are available when developing geographic information applications. The common services are generally defined in ISO 19119 and cover access to, and processing of, geographic information according to the common information model. This International Standard covers implementation issues.