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# Geographic information — XML schema implementation —

## Part 1: Encoding rules



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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](http://www.iso.org/directives)).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

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](http://www.iso.org/iso/foreword.html).

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

This first edition of ISO/TS 19139-1 cancels and replaces ISO/TS 19139:2007, which has been technically revised.

A list of all parts in the ISO 19139 series can be found on the ISO website.

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](http://www.iso.org/members.html).

## Introduction

The importance of metadata describing digital geographic data is explained in detail in the text of ISO 19115-1, and other International Standards, e.g. ISO 19110, ISO 19119, ISO 19157. Those documents provide a structure for describing digital geographic data by defining metadata elements and establishing a common set of metadata terminology, definitions and extension procedures. These standards do not define encodings for those metadata.

To facilitate the standardization of implementations across the standards and in similar domain schemas, this document provides a definitive set of rules for encoding ISO metadata standards in Extensible Markup Language (XML). The resulting XML schemas are meant to enhance interoperability by providing a common specification for describing, validating and exchanging metadata. These rules are intended to be used in parallel to the rules in ISO 19136:2007, Annex E for encoding application schemas into XML/GML. The difference is that those rules are for data that represents features; these rules are for metadata about that data.

ISO 19118 describes the requirements for creating encoding rules based on UML schemas and the XML based encoding rules as well as introducing XML. This document uses the encoding rules defined in ISO 19118 and provides the specific details of their application with regards to deriving XML schema for the UML models for other metadata standards.

These rules were first used in creating ISO/TS 19115-3 as an XML encoding of ISO 19115-1, i.e. ISO/TS 19115-3 conforms to this document. They were also used to create ISO/TS 19157-2, an encoding of ISO 19157.

The standardization target of this document is XML implementations of metadata. This includes both other standards within the Geographic Information series and models developed by other organizations.