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## Geographic information — Metadata —

### Part 3: XML schema implementation for fundamental concepts

*Information géographique — Métadonnées —  
Partie 3: Mise en oeuvre par des schémas XML*



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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.

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

A list of all parts in the ISO 19115 series can be found on the ISO website.

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## Introduction

ISO 19115-1 explains the importance of metadata, specifies a model for describing geographic information resources by defining metadata entities, elements and terminology, and establishing an extension procedure for additional metadata content. ISO 19115-1:2014, Annex G describes the revisions from ISO 19115:2003. The revised content model also incorporates metadata elements defined in ISO 19119:2005 and ISO 19119:2005/Amd 1:2008 for metadata describing web services. More detailed metadata for geographic data types and data quality are defined in other ISO geographic information standards (e.g. ISO 19110 and ISO 19157). Where necessary, interpretations of some other ISO geographic information standards are incorporated for this implementation.

ISO 19115-2 extends ISO 19115-1 by adding models for acquisition information and extending the models for metadata (MD\_Metadata), data quality (DQ\_DataQuality, now in ISO 19157), spatial representation (MD\_SpatialRepresentation), and content information (MD\_ContentInformation).

ISO 19115-1 and ISO 19115-2 define conceptual models for metadata content that are independent of any particular encoding scheme. ISO/TS 19139 and ISO/TS 19139-2 define eXtensible Markup Language (XML) schemas for encoding that content. This document defines XML encodings for ISO 19115-1 and ISO 19115-2 metadata content. This integrated schema makes it possible to use concepts from ISO 19115-1 and ISO 19115-2 together in metadata instance documents, effectively replacing ISO/TS 19139 and ISO/TS 19139-2 and enables automated validation and interchange of ISO 19115-1 and ISO 19115-2, metadata content using standard software tools.

The integrated schema were derived from ISO 19115-1 and ISO 19115-2 conceptual models using the rules defined in ISO 19118:2011, Annex A, ISO/TS 19139 applied to an adopted implementation-ready UML version of the conceptual models as described in [Clause 8](#). The implementation approach enables modularization and eases reuse of elements of the conceptual models. Abstract classes were added to the ISO geographic information harmonized model, without altering the semantics, to create an implementation model that was used for this XML implementation (see [Clause 8](#) for details).

The primary use case envisioned for this XML implementation is the exchange of geographic metadata in a client-server environment exemplified by the World Wide Web, in which the internal management and structure of metadata content is independent of the encoding used for exchange of metadata information. Adoption of this geographic metadata XML schema within an information-sharing community will garner the benefits of standardization for resource discovery, access, use, and understanding.