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English Version

**Geographic information - Metadata - XML schema
implementation (ISO/TS 19139:2007)**

Information géographique - Métadonnées - Implémentation
de schémas XML (ISO/TS 19139:2007)

Geoinformation - Metadaten - XML-Schema-
Implementierung (ISO/TS 19139:2007)

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Foreword

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Endorsement notice

The text of ISO/TS 19139:2007 has been approved by CEN as a CEN ISO/TS 19139:2009 without any modification.

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Introduction

The importance of metadata describing digital geographic data is explained in detail in the text of ISO 19115. ISO 19115 provides a structure for describing digital geographic data by defining metadata elements and establishing a common set of metadata terminology, definitions and extension procedures. ISO 19115 is abstract in that it provides a worldwide view of metadata relative to geographic information, but no encoding.

Since ISO 19115 does not provide any encoding, the actual implementation of geographic information metadata could vary based on the interpretation of metadata producers. In an attempt to facilitate the standardization of implementations, this comprehensive metadata implementation specification provides a definitive, rule-based encoding for applying ISO 19115. This Technical Specification provides Extensible Markup Language (XML) schemas that are meant to enhance interoperability by providing a common specification for describing, validating and exchanging metadata about geographic datasets, dataset series, individual geographic features, feature attributes, feature types, feature properties, etc.

ISO 19115 defines general-purpose metadata in the field of geographic information. More detailed metadata for geographic data types and geographic services are defined in other ISO 19100 series standards and user extensions (ISO 19115). This Technical Specification is also intended to define implementation guidelines for general-purpose metadata. Where necessary, interpretations of some other ISO 19100 series standards are incorporated.

ISO 19118 describes the requirements for creating encoding rules based on UML schemas and the XML-based encoding rules as well as providing an introduction to XML. This Technical Specification utilizes the encoding rules defined in ISO 19118 and provides the specific details of their application with regard to deriving XML schema for the UML models in ISO 19115.

Geographic information — Metadata — XML schema implementation

1 Scope

This Technical Specification defines Geographic MetaData XML (gmd) encoding, an XML schema implementation derived from ISO 19115.

2 Conformance

Conformance with this Technical Specification shall be checked using all the relevant tests specified in Annex A. The framework, concepts, and methodology for testing, and the criteria to be achieved to claim conformance are specified in ISO 19105.

3 Normative references

The following referenced documents are indispensable for the application 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 639-2, *Codes for the representation of names of languages — Part 2: Alpha-3 code*

ISO 3166 (all parts), *Codes for the representation of names of countries and their subdivisions*

ISO 8601, *Data elements and interchange formats — Information interchange — Representation of dates and times*

ISO/IEC 10646, *Information technology — Universal Multiple-Octet Coded Character Set (UCS)*

ISO/TS 19103, *Geographic information — Conceptual schema language*

ISO 19105, *Geographic information — Conformance and testing*

ISO 19107, *Geographic information — Spatial schema*

ISO 19108, *Geographic information — Temporal schema*

ISO 19109, *Geographic information — Rules for application schema*

ISO 19110, *Geographic information — Methodology for feature cataloguing*

ISO 19111:—¹⁾, *Geographic information — Spatial referencing by coordinates*

ISO 19115:2003, *Geographic information — Metadata*

1) To be published. (Revision of ISO 19111:2003)

ISO 19115:2003/Cor. 1:2006, *Geographic information — Metadata — Technical Corrigendum 1*

ISO 19117, *Geographic information — Portrayal*

ISO 19118:2005, *Geographic information — Encoding*

ISO 19136:—²), *Geographic information — Geography Markup Language (GML)*

W3C XMLName, *Namespaces in XML. W3C Recommendation* (14 January 1999)

W3C XMLSchema-1, *XML Schema Part 1: Structures. W3C Recommendation* (2 May 2001)

W3C XMLSchema-2, *XML Schema Part 2: Datatypes. W3C Recommendation* (2 May 2001)

W3C XML, *Extensible Markup Language (XML) 1.0 (Second Edition), W3C Recommendation* (6 October 2000)

W3C XLink, *XML Linking Language (XLink) Version 1.0. W3C Recommendation* (27 June 2001)

4 Terms and definitions

For the purposes of this Technical Specification, the following terms and definitions apply.

4.1

namespace

collection of names, identified by a URI reference, that are used in XML documents as element names and attribute names

[W3C XML]

4.2

package

general purpose mechanism for organizing elements into groups

[ISO/TS 19103, definition 4.2.22]

EXAMPLE Identification information; Metadata entity set information; Constraint information.

4.3

realization

semantic relationship between classifiers, wherein one classifier specifies a contract that another classifier guarantees to carry out

[Booch 1999]

4.4

polymorphism

characteristic of being able to assign a different meaning or usage to something in different contexts – specifically, to allow an entity such as a variable, a function, or an object to have more than one form

NOTE There are several different kinds of polymorphism.

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2) To be published.