SLOVENSKI STANDARD
SIST-TS CEN ISO/TS 19139:2010

01-januar-2010

Geografske informacije - Metapodatki - Implementacija sheme XML (ISO/TS 19139:2007)

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

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

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

Ta slovenski standard je istoveten z: **CEN ISO/TS 19139 :2009**

ICS:

35.240.70	Uporabniške rešitve IT v znanosti	IT applications in science

SIST-TS CEN ISO/TS 19139:2010 **en**

TECHNICAL SPECIFICATION

SPÉCIFICATION TECHNIQUE

TECHNISCHE SPEZIFIKATION

CEN ISO/TS 19139

November 2009

ICS 35.240.70

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)

This Technical Specification (CEN/TS) was approved by CEN on 14 May 2009 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

CEN members are required to announce the existence of this CEN/TS in the same way as for an EN and to make the CEN/TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the CEN/TS) until the final decision about the possible conversion of the CEN/TS into an EN is reached.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

Foreword

The text of ISO/TS 19139:2007 has been prepared by Technical Committee ISO/TC 211 “Geographic information/Geomatics” of the International Organization for Standardization (ISO) and has been taken over as CEN ISO/TS 19139:2009 by Technical Committee CEN/TC 287 “Geographic Information” the secretariat of which is held by NEN.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this Technical Specification: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

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

TECHNICAL SPECIFICATION

ISO/TS 19139

First edition
2007-04-15

Geographic information — Metadata — XML schema implementation

Information géographique — Métadonnées — Implémentation de schémas XML

Reference number
ISO/TS 19139:2007(E)

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
Web www.iso.org

Published in Switzerland

Contents

Page

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.

In other circumstances, particularly when there is an urgent market requirement for such documents, a technical committee may decide to publish other types of normative document:

— an ISO Publicly Available Specification (ISO/PAS) represents an agreement between technical experts in an ISO working group and is accepted for publication if it is approved by more than 50 % of the members of the parent committee casting a vote;

— an ISO Technical Specification (ISO/TS) represents an agreement between the members of a technical committee and is accepted for publication if it is approved by 2/3 of the members of the committee casting a vote.

An ISO/PAS or ISO/TS is reviewed after three years in order to decide whether it will be confirmed for a further three years, revised to become an International Standard, or withdrawn. If the ISO/PAS or ISO/TS is confirmed, it is reviewed again after a further three years, at which time it must either be transformed into an International Standard or be withdrawn.

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/TS 19139 was prepared by Technical Committee ISO/TC 211, *Geographic information/Geomatics*.

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.

[http://searchsmallbizit.techtarget.com]

2) To be published.

5 Symbols and abbreviated terms

5.1 Acronyms

UML	Unified Modelling Language
XCT	XML Class Type
XCPT	XML Class Property Type
XCGE	XML Class Global Element
XML	Extensible Markup Language
XPath	XML Path Language
XSD	XML Schema Definition
XSL	Extensible Style Language
XSLT	XSL Transformation

5.2 Namespace abbreviations

In the lists below, the item on the left describes the common namespace prefix used to describe the elements in the namespace. The second item is an English description of the namespace prefix, and the item in parenthesis is the URI of the actual namespace. These URIs do not correspond necessarily to an effective location of the schemas.

This first list corresponds to the namespaces defined by this Technical Specification.

gco	Geographic Common extensible markup language	(http://www.isotc211.org/2005/gco)
gmd	Geographic MetaData extensible markup language	(http://www.isotc211.org/2005/gmd)
gmx	Geographic Metadata XML Schema	(http://www.isotc211.org/2005/gmx)
gss	Geographic Spatial Schema extensible markup language	(http://www.isotc211.org/2005/gss)
gsr	Geographic Spatial Referencing extensible markup language	(http://www.isotc211.org/2005/gsr)
gts	Geographic Temporal Schema extensible markup language	(http://www.isotc211.org/2005/gts)

This second list corresponds to external namespaces used by this Technical Specification.

gml	Geography Markup Language	(use the GML namespace URI stated in ISO 19136)
xlink	XML Linking Language	(use the XLINK namespace URI stated in the W3C XLink recommendation)
xs	W3C XML base schemas	(use the XML schema namespace URI stated in the W3C XMLSchema-1 and W3C XMLSchema-2 recommendations)

5.3 UML model relationships

The diagrams that appear in this Technical Specification are presented using the Unified Modelling Language (UML) as the conceptual schema language as defined in ISO/TS 19103. ISO 19115:2003, Figure 2, also displays the UML notation that is used to describe the metadata. In addition to the UML described in ISO/TS 19103 and shown in ISO 19115, this Technical Specification uses the notation shown in Figure 1.