



SLOVENSKI STANDARD SIST EN ISO 19115:2005

01-april-2005

Geografske informacije – Metapodatki (ISO 19115:2003)

Geographic information - Metadata (ISO 19115:2003)

Geoinformation - Metadaten (ISO 19115:2003)

Information géographique - Métadonnées (ISO 19115:2003)

iTeh STANDARD PREVIEW

(standards.itih.ai)

Ta slovenski standard je istoveten z: **EN ISO 19115:2005**

<https://standards.itih.ai/catalog/standards/sist/577351d0-6bcc-4fda-9ad5-d18ca09c21a4/sist-en-iso-19115-2005>

ICS:

07.040	Astronomija. Geodezija. Geografija	Astronomy. Geodesy. Geography
35.240.70	Uporabniške rešitve IT v znanosti	IT applications in science

SIST EN ISO 19115:2005

en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN ISO 19115:2005](#)

<https://standards.iteh.ai/catalog/standards/sist/577351d0-6bcc-4fda-9ad5-d18ca09c21a4/sist-en-iso-19115-2005>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 19115

January 2005

ICS 35.240.70

English version

Geographic information - Metadata (ISO 19115:2003)

Information géographique - Métadonnées (ISO
19115:2003)

Geoinformation - Metadaten (ISO 19115:2003)

This European Standard was approved by CEN on 24 December 2004.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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

STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 19115:2005
<https://standards.iteh.ai/catalog/standards/sist/577351d0-6bcc-4fda-9ad5-d18ca09c21a4/sist-en-iso-19115-2005>



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

Management Centre: rue de Stassart, 36 B-1050 Brussels

EN ISO 19115:2005 (E)**Foreword**

The text of ISO 19115:2003 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 EN ISO 19115:2005 by Technical Committee CEN/TC 287 "Geographic Information", the secretariat of which is held by NEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by July 2005, and conflicting national standards shall be withdrawn at the latest by July 2005.

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

Endorsement notice

The text of ISO 19115:2003 has been approved by CEN as EN ISO 19115:2005 without any modifications.

[SIST EN ISO 19115:2005](https://standards.iteh.ai/catalog/standards/sist/577351d0-6bcc-4fda-9ad5-d18ca09c21a4/sist-en-iso-19115-2005)

<https://standards.iteh.ai/catalog/standards/sist/577351d0-6bcc-4fda-9ad5-d18ca09c21a4/sist-en-iso-19115-2005>

INTERNATIONAL STANDARD

ISO
19115

First edition
2003-05-01

Geographic information — Metadata

Information géographique — Métadonnées

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN ISO 19115:2005](https://standards.iteh.ai/catalog/standards/sist/577351d0-6bcc-4fda-9ad5-d18ca09c21a4/sist-en-iso-19115-2005)

<https://standards.iteh.ai/catalog/standards/sist/577351d0-6bcc-4fda-9ad5-d18ca09c21a4/sist-en-iso-19115-2005>



Reference number
ISO 19115:2003(E)

© ISO 2003

ISO 19115:2003(E)**PDF disclaimer**

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN ISO 19115:2005](https://standards.iteh.ai/catalog/standards/sist/577351d0-6bcc-4fda-9ad5-d18ca09c21a4/sist-en-iso-19115-2005)

<https://standards.iteh.ai/catalog/standards/sist/577351d0-6bcc-4fda-9ad5-d18ca09c21a4/sist-en-iso-19115-2005>

© ISO 2003

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

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	vii
Introduction.....	viii
1 Scope	1
2 Conformance	1
2.1 Conformance requirements	1
2.2 Metadata Profiles	1
2.3 Obligation and condition	2
3 Normative references	2
4 Terms and definitions	3
5 Symbols and abbreviated terms	4
5.1 Abbreviations	4
5.2 UML notations	4
5.3 UML model relationships	5
5.3.1 Associations	5
5.3.2 Generalization	5
5.3.3 Instantiation/Dependency	5
5.3.4 Roles	5
5.4 UML model stereotypes	6
5.5 Package abbreviations	7
5.6 UML model/data dictionary relationships	8
6 Requirements	8
6.1 Metadata for geographic data requirement	8
6.2 Metadata application information	8
6.3 Metadata packages	9
6.3.1 Metadata package and entity relationship	9
6.3.2 Package descriptions	11
6.4 Metadata datatypes	14
6.4.1 Extent information (EX_Extent)	14
6.4.2 Citation and responsible party information (CI_Citation and CI_ResponsibleParty)	15
6.5 Core metadata for geographic datasets	15
6.6 Unified Modelling Language (UML) diagrams	16
6.7 Data dictionary	16
6.8 Metadata extensions and profiles	17
6.9 Abstract test suite	17
6.10 Comprehensive dataset metadata application profile	17
6.11 Metadata extension methodology	17
6.12 Metadata implementation	17
6.13 Hierarchical levels of metadata	17
6.14 Implementation examples	17
6.15 Multilingual support for free text fields	17
Annex A (normative) Metadata schemas	18
A.1 Metadata UML models	18
A.2 Metadata package UML diagrams	19
A.2.1 Metadata entity set information	19
A.2.2 Identification information	19
A.2.3 Constraint information	21
A.2.4 Data quality information	22
A.2.5 Maintenance information	25
A.2.6 Spatial representation information	26

ISO 19115:2003(E)

A.2.7	Reference system information	27
A.2.8	Content information.....	28
A.2.9	Portrayal catalogue information.....	29
A.2.10	Distribution information.....	30
A.2.11	Metadata extension information.....	31
A.2.12	Application schema information.....	32
A.3	Metadata data types	33
A.3.1	Extent information	33
A.3.2	Citation and responsible party information	34
Annex B	(normative) Data dictionary for geographic metadata.....	35
B.1	Data dictionary overview	35
B.1.1	Introduction	35
B.1.2	Name/role name	35
B.1.3	Short name and domain code	35
B.1.4	Definition	35
B.1.5	Obligation/Condition	36
B.1.6	Maximum occurrence.....	36
B.1.7	Data type.....	36
B.1.8	Domain.....	36
B.2	Metadata package data dictionaries	38
B.2.1	Metadata entity set information.....	38
B.2.2	Identification information (includes data and service identification).....	40
B.2.3	Constraint information (includes legal and security)	46
B.2.4	Data quality information.....	48
B.2.5	Maintenance information.....	57
B.2.6	Spatial representation information (includes grid and vector representation).....	59
B.2.7	Reference system information (includes temporal, coordinate and geographic identifiers).....	63
B.2.8	Content information (includes Feature catalogue and Coverage descriptions).....	68
B.2.9	Portrayal catalogue information.....	73
B.2.10	Distribution information.....	73
B.2.11	Metadata extension information.....	78
B.2.12	Application schema information.....	80
B.3	Data type information.....	81
B.3.1	Extent information	81
B.3.2	Citation and responsible party information	85
B.4	Externally referenced entities.....	91
B.4.1	Introduction	91
B.4.2	Date and DateTime information.....	91
B.4.3	Distance, angle, measure, number, record, recordType, scale and UomLength information....	91
B.4.4	Feature type, property type, and attribute type information	91
B.4.5	PeriodDuration and temporal primitive information	91
B.4.6	Point and Object information	92
B.4.7	Set and Sequence information	92
B.4.8	Type name information	92
B.4.9	Vertical datum information	92
B.5	CodeLists and enumerations	92
B.5.1	Introduction	92
B.5.2	CI_DateTypeCode <<CodeList>>	92
B.5.3	CI_OnLineFunctionCode <<CodeList>>.....	93
B.5.4	CI_PresentationFormCode <<CodeList>>	93
B.5.5	CI_RoleCode <<CodeList>>	93
B.5.6	DQ_EvaluationMethodTypeCode <<CodeList>>	94
B.5.7	DS_AssociationTypeCode <<CodeList>>	94
B.5.8	DS_InitiativeTypeCode <<CodeList>>	94
B.5.9	MD_CellGeometryCode <<CodeList>>	95
B.5.10	MD_CharacterSetCode <<CodeList>>	95
B.5.11	MD_ClassificationCode <<CodeList>>.....	96
B.5.12	MD_CoverageContentTypeCode <<CodeList>>.....	96
B.5.13	MD_DatatypeCode <<CodeList>>	97

B.5.14	MD_DimensionNameTypeCode <<CodeList>>	97
B.5.15	MD_GeometricObjectTypeCode <<CodeList>>	97
B.5.16	MD_ImagingConditionCode <<CodeList>>	98
B.5.17	MD_KeywordTypeCode <<CodeList>>	98
B.5.18	MD_MaintenanceFrequencyCode <<CodeList>>	99
B.5.19	MD_MediumFormatCode <<CodeList>>	99
B.5.20	MD_MediumNameCode <<CodeList>>	99
B.5.21	MD_ObligationCode <<Enumeration>>	100
B.5.22	MD_PixelOrientationCode <<Enumeration>>	100
B.5.23	MD_ProgressCode <<CodeList>>	100
B.5.24	MD_RestrictionCode <<CodeList>>	101
B.5.25	MD_ScopeCode <<CodeList>>	101
B.5.26	MD_SpatialRepresentationTypeCode <<CodeList>>	102
B.5.27	MD_TopicCategoryCode << Enumeration>>	102
B.5.28	MD_TopologyLevelCode <<CodeList>>	104
Annex C	(normative) Metadata extensions and profiles	105
C.1	Background	105
C.2	Types of extensions	105
C.3	Creating an extension	105
C.4	Rules for creating an extension	105
C.5	Community profile	106
C.6	Rules for creating a profile	107
Annex D	(normative) Abstract test suite	108
D.1	Abstract test suite	108
D.2	Metadata test suite	108
D.2.1	Test case identifier: Completeness test	108
D.2.2	Test case identifier: Maximum occurrence test	108
D.2.3	Test case identifier: Short name test	108
D.2.4	Test case identifier: Data type test	109
D.2.5	Test case identifier: Domain test	109
D.2.6	Test case identifier: Schema test	109
D.3	User-defined extension metadata test suite	109
D.3.1	Test case identifier: Exclusiveness test	109
D.3.2	Test case identifier: Definition test	110
D.3.3	Test case identifier: Standard metadata test	110
D.4	Metadata profiles	110
D.4.1	Test case identifier: Metadata profiles	110
Annex E	(normative) Comprehensive dataset metadata application profile	111
E.1	Comprehensive dataset metadata application schema	111
E.2	Comprehensive dataset metadata profile – UML model	112
Annex F	(informative) Metadata extension methodology	113
F.1	Metadata extensions methodology	113
F.2	Review of existing metadata elements (Stage 1)	113
F.3	Definition of a new metadata section (Stage 2)	114
F.4	Definition of a new metadata codelist (Stage 3)	114
F.5	Definition of a new metadata codelist element (Stage 4)	114
F.6	Definition of a new metadata element (Stage 5)	115
F.7	Definition of a new metadata entity (Stage 6)	115
F.8	Definition of a more stringent metadata obligation (Stage 7)	116
F.9	Definition of more restrictive metadata codelist (Stage 8)	116
F.10	Documentation of metadata extensions (Stage 9)	117
Annex G	(informative) Metadata implementation	119
G.1	Background	119
G.1.1	Problem statement	119
G.1.2	Scope and objectives	119
G.1.3	Granularity of spatial data supported	119
G.2	Metadata hierarchy levels	120

ISO 19115:2003(E)

G.2.1	Dataset series metadata (optional)	120
G.2.2	Dataset metadata	120
G.2.3	Feature type metadata (optional)	121
G.2.4	Feature instance metadata (optional)	121
G.2.5	Attribute type metadata (optional)	121
G.2.6	Attribute instance metadata (optional)	121
Annex H	(informative) Hierarchical levels of metadata	122
H.1	Levels of metadata	122
H.2	Example	122
Annex I	(informative) Implementation examples	126
I.1	Metadata examples	126
I.2	Example 1 – Exploration Licences for Minerals	126
I.3	Example 2 – Example of extended metadata	129
I.4	Data dictionary for the extended elements	130
I.5	MD_KeywordType (Modified)	136
Annex J	(informative) Multilingual support for free text metadata element	137
J.1	Free text metadata elements	137
J.2	Data structure for handling multi-languages support in free text metadata elements	138
J.3	Example of multi-languages free text in a metadata element	139
Bibliography	140

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN ISO 19115:2005](https://standards.iteh.ai/catalog/standards/sist/577351d0-6bcc-4fda-9ad5-d18ca09c21a4/sist-en-iso-19115-2005)

<https://standards.iteh.ai/catalog/standards/sist/577351d0-6bcc-4fda-9ad5-d18ca09c21a4/sist-en-iso-19115-2005>

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 19115 was prepared by Technical Committee ISO/TC 211, *Geographic information/Geomatics*.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN ISO 19115:2005](https://standards.iteh.ai/catalog/standards/sist/577351d0-6bcc-4fda-9ad5-d18ca09c21a4/sist-en-iso-19115-2005)

<https://standards.iteh.ai/catalog/standards/sist/577351d0-6bcc-4fda-9ad5-d18ca09c21a4/sist-en-iso-19115-2005>

Introduction

A revival in the awareness of the importance of geography and how things relate spatially, combined with the advancement of electronic technology, have caused an expansion in the use of digital geographic information and geographic information systems worldwide. Increasingly, individuals from a wide range of disciplines outside of the geographic sciences and information technologies are capable of producing, enhancing, and modifying digital geographic information. As the number, complexity, and diversity of geographic datasets grow, a method for providing an understanding of all aspects of this data grows in importance.

Digital geographic data is an attempt to model and describe the real world for use in computer analysis and graphic display of information. Any description of reality is always an abstraction, always partial, and always just one of many possible "views". This "view" or model of the real world is not an exact duplication; some things are approximated, others are simplified, and some things are ignored. There is seldom perfect, complete, and correct data. To ensure that data is not misused, the assumptions and limitations affecting the creation of data must be fully documented. Metadata allows a producer to describe a dataset fully so that users can understand the assumptions and limitations and evaluate the dataset's applicability for their intended use.

Typically, geographic data is used by many people other than the producer. It is often produced by one individual or organization and used by another. Proper documentation will provide those unfamiliar with the data with a better understanding, and enable them to use it properly. As geographic data producers and users handle more and more data, proper documentation will provide them with a keener knowledge of their holdings and will allow them to better manage data production, storage, updating, and reuse.

The objective of this International Standard is to provide a structure for describing digital geographic data. This International Standard is intended to be used by information system analysts, program planners, and developers of geographic information systems, as well as others in order to understand the basic principles and the overall requirements for standardization of geographic information. This International Standard defines metadata elements, provides a schema and establishes a common set of metadata terminology, definitions, and extension procedures. When implemented by a data producer, this International Standard will:

- 1) Provide data producers with appropriate information to characterize their geographic data properly.
- 2) Facilitate the organization and management of metadata for geographic data.
- 3) Enable users to apply geographic data in the most efficient way by knowing its basic characteristics.
- 4) Facilitate data discovery, retrieval and reuse. Users will be better able to locate, access, evaluate, purchase and utilize geographic data.
- 5) Enable users to determine whether geographic data in a holding will be of use to them.

This International Standard defines general-purpose metadata, in the field of geographic information. More detailed metadata for geographic datatypes and geographic services are defined in other ISO 19100 series standards and user extensions.

Geographic information — Metadata

1 Scope

This International Standard defines the schema required for describing geographic information and services. It provides information about the identification, the extent, the quality, the spatial and temporal schema, spatial reference, and distribution of digital geographic data.

This International Standard is applicable to:

- the cataloguing of datasets, clearinghouse activities, and the full description of datasets;
- geographic datasets, dataset series, and individual geographic features and feature properties.

This International Standard defines:

- mandatory and conditional metadata sections, metadata entities, and metadata elements;
- the minimum set of metadata required to serve the full range of metadata applications (data discovery, determining data fitness for use, data access, data transfer, and use of digital data);
- optional metadata elements — to allow for a more extensive standard description of geographic data, if required;
- a method for extending metadata to fit specialized needs.

Though this International Standard is applicable to digital data, its principles can be extended to many other forms of geographic data such as maps, charts, and textual documents as well as non-geographic data.

NOTE Certain mandatory metadata elements may not apply to these other forms of data.

2 Conformance

2.1 Conformance requirements

Metadata shall be provided as specified in Clause 6 and Annexes A and B.

User-defined metadata shall be defined and provided as specified in Annex C.

Any metadata claiming conformance with this International Standard shall pass the requirements described in the abstract test suite presented in Annex D.

2.2 Metadata Profiles

Any profile conforming to this International Standard shall conform to the rules in Annex C, Clause C.6.

ISO 19115:2003(E)**2.3 Obligation and condition**

For the purposes of conformance testing using the abstract test suite in Annex D, metadata entities and elements shall be considered to be mandatory, conditional or optional as specified in the applicable profile.

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 (all parts), *Code for the representation of names of languages*

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

ISO 4217:2001, *Codes for the representation of currencies and funds*

ISO 8859 (parts 1 to 16), *Information technology — 8-bit single-byte coded graphic character sets*

ISO 8879, *Information processing — Text and office systems — Standard Generalized Markup Language (SGML)*

ISO/IEC 10646-1, *Information technology — Universal Multiple-Octet Coded Character Set (UCS) — Part 1: Architecture and Basic Multilingual Plane*

ISO/IEC 11179 (all parts), *Information technology — Specification and standardization of data elements*

ISO 19106:—¹⁾, *Geographic information — Profiles*

ISO 19107:—¹⁾, *Geographic information — Spatial schema*

ISO 19108:2002, *Geographic information — Temporal schema*

ISO 19109:—¹⁾, *Geographic information — Rules for application schema*

ISO 19110:—¹⁾, *Geographic information — Methodology for feature cataloguing*

ISO 19111:2003, *Geographic information — Spatial referencing by coordinates*

ISO 19112:—¹⁾, *Geographic information — Spatial referencing by geographic identifiers*

ISO 19113:2002, *Geographic information — Quality principles*

ISO 19114:—¹⁾, *Geographic information — Quality evaluation procedures*

ISO 19117:—¹⁾, *Geographic information — Portrayal*

ISO 19118:—¹⁾, *Geographic information — Encoding*

1) To be published.

4 Terms and definitions

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

NOTE The terms and definitions used in conjunction with the UML models are addressed in Clause 5.

4.1

data type

specification of a value domain with operations allowed on values in this domain [ISO 19103]

EXAMPLE Integer, Real, Boolean, String, Date, and GM_Point.

NOTE A data type is identified by a term, e.g. Integer.

4.2

dataset

identifiable collection of data

NOTE A dataset may be a smaller grouping of data which, though limited by some constraint such as spatial extent or feature type, is located physically within a larger dataset. Theoretically, a dataset may be as small as a single feature or feature attribute contained within a larger dataset. A hardcopy map or chart may be considered a dataset.

4.3

dataset series

collection of datasets sharing the same product specification

4.4

grid

network composed of two or more sets of curves in which the member of each set intersect the members of the other sets in an algorithmic way [ISO 19123]

4.5

metadata

data about data

4.6

metadata element

discrete unit of metadata

NOTE 1 Metadata elements are unique within a metadata entity.

NOTE 2 Equivalent to an attribute in UML terminology.

4.7

metadata entity

set of metadata elements describing the same aspect of data

NOTE 1 May contain one or more metadata entities.

NOTE 2 Equivalent to a class in UML terminology.

4.8

metadata section

subset of metadata which consists of a collection of related metadata entities and metadata elements

NOTE Equivalent to a package in UML terminology.

4.9

model

abstraction of some aspects of a universe of discourse [ISO 19109]