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Geografske informacije - Metapodatki - 2. del: Razširitev za zajemanje in obdelavo geografskih informacij (ISO 19115-2:2019)

Geographic information - Metadata - Part 2: Extensions for acquisition and processing (ISO 19115-2:2019)

Geoinformation - Metadaten - Teil 2: Erweiterungen für Bild- und Rasterdaten (ISO 19115-2:2019)

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Information géographique - Métadonnées - Partie 2: Extensions pour l'acquisition et le traitement (ISO 19115-2:2019)

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EUROPEAN STANDARD

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Geographic information - Metadata - Part 2: Extensions for acquisition and processing (ISO 19115-2:2019)

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Geoinformation - Metadaten - Teil 2: Erweiterungen
für Erhebung und Verarbeitung (ISO 19115-2:2019)

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COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

This document (EN ISO 19115-2:2019) has been prepared by Technical Committee ISO/TC 211 "Geographic information/Geomatics" in collaboration with Technical Committee CEN/TC 287 "Geographic Information" the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by August 2019, and conflicting national standards shall be withdrawn at the latest by August 2019.

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INTERNATIONAL
STANDARD

ISO
19115-2

Second edition
2019-01

**Geographic information —
Metadata —**

**Part 2:
Extensions for acquisition and
processing**

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*Information géographique — Métadonnées —
Partie 2: Extensions pour l'acquisition et le traitement*
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ISO 19115-2:2019(E)

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).

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).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on 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 the following URL: www.iso.org/iso/foreword.html. (standards.iteh.ai)

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

This second edition cancels and replaces the first edition (ISO 19115-2:2009), which has been technically revised.

The following is a summary of major changes to this document during the revision process:

- The name and scope were changed to better describe the purpose of the document;
- QE_CoverageResult and QE_Useability were moved to ISO 19157;
- All extended classes now extend ISO 19115-1:2014;
- Whereas the XML Schema encoding for ISO 19115-2:2009 was provided in ISO/TS 19139-2; the link and information about the XML schema for this revision is provided in [Annex C](#) of this document;
- A specified class of MI_Instrument – MI_Sensor was defined. A list of all the parts in the ISO 19115 series, can be found on the ISO website.

Introduction

This document replaces the previous edition (ISO 19115-2:2009) *Geographic information — Metadata — Extension for imagery and gridded data*, which focused on metadata for imagery and gridded data as they are important information sources and products used within a geospatial environment by geographic information systems. During the revision process it was noted that this metadata applied to the acquisition and processing of geographic information from all sources not just imagery and gridded data. Hence, the new title *Geographic information — Metadata — Extensions for acquisition and processing*. The production of all geographic information, including imagery and gridded data, follows one or more process chains that begins with remote sensing data, scanned maps, field data collection or other sensing methods and ends with the creation of the end data products. The production process needs to be documented to maintain quality control over the end products. In addition, metadata about the geometry of the measuring process and the properties of the measuring equipment need to be retained with the raw data to support the production process.

The object of this document is to provide the additional structure needed to more extensively describe the acquisition and processing of geographic information from all sources. This structure is intended to augment ISO 19115-1. This document also provides an XML schema for implementing this document using ISO/TS 19115-3.

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Geographic information — Metadata —

Part 2: Extensions for acquisition and processing

1 Scope

This document extends ISO 19115-1:2014 by defining the schema required for an enhanced description of the acquisition and processing of geographic information, including imagery. Included are the properties of measuring systems and the numerical methods and computational procedures used to derive geographic information from the data acquired by them. This document also provides the XML encoding for acquisition and processing metadata thereby extending the XML schemas defined in ISO/TS 19115-3.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 19103:2015, *Geographic information — Conceptual schema language*

ISO 19115-1:2014, *Geographic information — Metadata — Part 1: Fundamentals*

ISO 19157:2013, *Geographic information — Data quality*

ISO/IEC 19501:2005, *Information technology — Open Distributed Processing — Unified Modeling Language (UML) Version 1.4.2*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 19115-1:2014 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

3.1

attribute

named property of an entity

Note 1 to entry: Describes a geometrical, topological, thematic, or other characteristic of an entity.

[SOURCE: ISO/IEC 2382:2015, 2121440, modified — Note 1 to entry replaces Notes 1 and 2 to entry.]

3.2

band

range of wavelengths of electromagnetic radiation that produce a single response by a sensing device

[SOURCE: ISO/TS 19101-2:2008, 4.1]

ISO 19115-2:2019(E)**3.3****class**

description of a set of objects that share the same *attributes* (3.1), operations, methods, relationships, and semantics

[SOURCE: ISO 19103:2015, 4.7]

3.4**coverage**

feature that acts as a function to return *values* (3.29) from its range for any direct position within its spatial, temporal or spatiotemporal *domain* (3.8)

EXAMPLE Raster *image* (3.18), polygon overlay, or digital elevation matrix.

[SOURCE: ISO 19123:2005, 4.1.7, modified — NOTE deleted.]

3.5**data type**

specification of a *value domain* (3.30) with operations allowed on *values* (3.29) in this *domain* (3.8)

[SOURCE: ISO 19103:2015, 4.14, modified — EXAMPLE and Note 1 to entry deleted.]

3.6**dataset**

identifiable collection of data

[SOURCE: ISO 19115-1:2014, 4.3, modified — Note 1 to entry deleted.]

3.7**dataset series**

collection of *datasets* (3.6) sharing common characteristics

[SOURCE: ISO 19115-1:2014, 4.4]

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3.8**domain**

well-defined set

[SOURCE: ISO 19109:2015, 4.8, modified — Note 1 to entry deleted.]

3.9**event**

action which occurs at an instant

[SOURCE: ISO 19108:2002, 4.1.6]

3.10**geolocation information**

information used to determine geographic location corresponding to *image* (3.18) location

3.11**georectified**

corrected for positional displacement with respect to the surface of the Earth

3.12**georeferencing**

geopositioning an object using a Correspondence Model derived from a set of points for which both ground and *image* (3.18) coordinates are known

[SOURCE: ISO/TS 19130:2010, 4.37]

3.13**grid**

network composed of two or more sets of curves in which the members of each set intersect the members of the other sets in an algorithmic way

Note 1 to entry: The curves partition a space into grid cells.

[SOURCE: ISO 19123:2005, 4.1.23]

3.14**grid coordinate system**

coordinate system in which a position is specified relative to the intersection of curves

3.15**grid coordinates**

sequence of two or more numbers specifying a position with respect to its location on a *grid* (3.13)

3.16**gridded data**

data whose *attribute* (3.1) *values* (3.29) are associated with positions on a *grid coordinate system* (3.14)

3.17**ground control point**

point on the earth that has an accurately known geographic position

3.18**image**

gridded *coverage* (3.4) whose *attribute* (3.1) *values* (3.29) are a numerical representation of a physical parameter

Note 1 to entry: The physical parameters are the result of measurement by a *sensor* (3.27) or a prediction from a model.

3.19**imagery**

representation of phenomena as *images* (3.18) produced by electronic and/or optical techniques

Note 1 to entry: In this document, it is assumed that the objects and phenomena have been sensed or detected by radar, cameras, photometers, and infrared and multispectral scanners, or similar devices.

[SOURCE: ISO 19101-2:2008, 4.14]

3.20**metadata**

information about a resource

[SOURCE: ISO 19115-1:2014, 4.10]

3.21**pass**

single instance of a remote, mobile measuring system going by a target of interest

Note 1 to entry: In this document, the measuring system will usually be a *remote sensing* (3.25) *platform* (3.23). In a navigation context, the measuring system might be a GPS satellite.

3.22**pixel**

smallest element of a digital *image* (3.18) to which *attributes* (3.1) are assigned

Note 1 to entry: It is the smallest unit of display for a visible image.

[SOURCE: ISO/TS 19101-2:2008, 4.28, modified — Note 1 to entry replaces NOTES 1 and 2.]