

DIN EN ISO 19115-2

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Ersatz für
DIN EN ISO 19115-2:2019-04**Geoinformation –
Metadaten –****Teil 2: Erweiterungen für Erhebung und Verarbeitung (ISO 19115-2:2019 +
Amd 1:2022);****Englische Fassung EN ISO 19115-2:2019 + A1:2022**Geographic information –
Metadata –Part 2: Extensions for acquisition and processing (ISO 19115-2:2019 + Amd 1:2022);
English version EN ISO 19115-2:2019 + A1:2022Information géographique –
Métadonnées –Partie 2: Extensions pour l'acquisition et le traitement (ISO 19115-2:2019 + Amd 1:2022);
Version anglaise EN ISO 19115-2:2019 + A1:2022

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Nationales Vorwort

Dieses Dokument (EN ISO 19115-2:2019 + A1:2022) wurde vom Technischen Komitee ISO/TC 211 „Geographic information/Geomatics“ in Zusammenarbeit mit dem Technischen Komitee CEN/TC 287 „Geoinformation“ erarbeitet, dessen Sekretariat von BSI (Vereinigtes Königreich) gehalten wird.

Das zuständige nationale Normungsgremium ist der Arbeitsausschuss NA 005-03-03 AA „Geoinformation (SpA zu CEN/TC 287+ISO/TC 211)“ im DIN-Normenausschuss Bauwesen (NABau).

Dieses Dokument enthält unter Berücksichtigung des DIN-Präsidialbeschlusses 1/2004 nur die englische Originalfassung von EN ISO 19115-2:2019 + A1:2022.

Dieses Dokument enthält die Änderung 1, angenommen von CEN am 2020-10-06.

Für die in diesem Dokument zitierten Dokumente wird im Folgenden auf die entsprechenden deutschen Dokumente hingewiesen:

ISO 19108:2002	siehe	DIN EN ISO 19108:2005-05
ISO 19109:2015	siehe	DIN EN ISO 19109:2016-05
ISO 19115-1:2014	siehe	DIN EN ISO 19115-1:2014-07
ISO 19123:2005	siehe	DIN EN ISO 19123:2007-06
ISO 19157:2013	siehe	DIN EN ISO 19157:2014-04

Aktuelle Informationen zu diesem Dokument können über die Internetseiten von DIN (www.din.de) durch eine Suche nach der Dokumentennummer aufgerufen werden.

Änderungen

Gegenüber DIN EN ISO 19115-2:2019-04 wurden folgende Änderungen vorgenommen:

- a) in Abschnitt B.2 wurden Tabelle B.4, Tabelle B.9 und Tabelle B.18 ersetzt;
- b) in Abschnitt B.3 wurde Tabelle B.32 ersetzt;
- c) Anhang C ersetzt.

Frühere Ausgaben

DIN EN ISO 19115-2: 2010-05, 2019-04

Nationaler Anhang NA (informativ)

Begriffe

Reihenfolge und Inhalt der folgenden Begriffe sind identisch mit denen im Abschnitt Begriffe der Englischen Fassung.

3.1

Attribut

benannte Eigenschaft einer Entität

Anmerkung 1 zum Begriff: Beschreibt ein geometrisches, topologisches, thematisches oder sonstiges Merkmal einer Entität.

[QUELLE: ISO/IEC 2382:2015, 2121440, modifiziert — Anmerkung 1 zum Begriff ersetzt Anmerkung 1 zum Begriff und Anmerkung 2 zum Begriff.]

3.2

Band

Bereich der Wellenlängen elektromagnetischer Strahlung, die eine Reaktion eines Sensors hervorrufen

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

3.3

Klasse

Beschreibung einer Menge von Objekten mit einem gemeinsamen *Attribut* (3.1), gemeinsamen Operationen, Methoden, Verhältnissen und Semantiken

[QUELLE: ISO 19103:2015, 4.7]

3.4

Coverage

Feature, das als Funktion zur Rückgabe von *Werten* (3.29) aus seinem Wertebereich für jede direkte Position innerhalb seines räumlichen, zeitlichen oder räumlich-zeitlichen *Bereichs* (3.8) dient

BEISPIEL Raster**bild** (3.18), Flächenverschnidung oder digitale Höhenmatrix.

[QUELLE: ISO 19123:2005, 4.1.7, modifiziert – Anmerkung gelöscht]

3.5

Datentyp

Festlegung eines *Wertebereichs* (3.30) mit auf den *Werten* (3.29) in diesem *Bereich* (3.8) zulässigen Operationen

[QUELLE: ISO 19103:2015, 4.14, modifiziert – Beispiel und Anmerkung 1 zum Begriff gelöscht]

3.6

Datensatz

identifizierbare Sammlung von Daten

[QUELLE: ISO 19115-1:2014, 4.3, modifiziert – Anmerkung 1 zum Begriff gelöscht]

3.7

Serie von Datensätzen

Sammlung von *Datensätzen* (3.6) mit gemeinsamer Produktspezifikation

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

3.8

Bereich

Wertebereich

wohldefinierter Bereich

[QUELLE: ISO 19109:2015, 4.8, modifiziert – Anmerkung 1 zum Begriff gelöscht]

3.9

Ereignis

Aktion, die zu einem Zeitpunkt (en: instant) erfolgt

[QUELLE: ISO 19108:2002, 4.1.6]

3.10

Geolokalisierungsinformationen

Informationen zur Bestimmung der einem *Bildort* (3.18) entsprechenden geographischen Lage

3.11

georektifiziert, Adj., en: georectified

korrigiert im Hinblick auf die Positionsverschiebung in Bezug auf die Erdoberfläche

3.12

Georeferenzierung

Geopositionierung eines Objekts unter Verwendung eines Korrespondenzmodells, das aus einer Reihe von Punkten abgeleitet ist, für die sowohl Boden- als auch *Bildkoordinaten* (3.18) bekannt sind

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

3.13

Raster

Netz aus zwei oder mehr Kurvenscharen, wobei die Mitglieder einer Schar jeweils die Mitglieder der anderen Scharen auf algorithmische Weise schneiden

Anmerkung 1 zum Begriff: Die Kurven unterteilen einen Raum in Rasterzellen.

[QUELLE: ISO 19123:2005, 4.1.23]

3.14

Rasterkoordinatensystem

Koordinatensystem, in dem eine Position in Bezug auf den Schnittpunkt von Kurven angegeben ist

3.15

Rasterkoordinaten

Folge von zwei oder mehr Zahlen, die eine Position in Bezug auf deren Lage in einem *Raster* (3.13) angeben

3.16

Rasterdaten

Daten, bei denen die *Werte* (3.29) ihrer *Attribute* (3.1) mit Positionen in einem *Rasterkoordinatensystem* (3.14) assoziiert sind

3.17**Passpunkt**

Punkt auf der Erde mit einer genau bekannten geographischen Lage

3.18**Bild**

Raster-*Coverage* (3.4), dessen *Attributwerte* eine numerische Darstellung eines physikalischen Parameters sind

Anmerkung 1 zum Begriff: Die physikalischen Parameter sind das Ergebnis einer Messung durch einen *Sensor* (3.27) oder eine Vorhersage anhand eines Modells.

3.19**Bilddarstellung**

Darstellung eines Phänomens als *Bilder* (3.18), erzeugt mittels elektronischer und/oder optischer Verfahren

Anmerkung 1 zum Begriff: In diesem Dokument wird davon ausgegangen, dass die Objekte und Phänomene von Radar, Kameras, Photometern und Infrarot- und Multispektralscannern oder ähnlichen Geräten ertastet oder erfasst wurden.

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

3.20**Metadaten**

Informationen über eine Ressource

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

3.21**Passiervorgang**

einmaliges Vorbeiziehen eines mobilen Fernmesssystems an einem betreffenden Ziel

Anmerkung 1 zum Begriff: In diesem Dokument ist das Messsystem üblicherweise eine *Fernerkundungsplattform* (3.25) (3.23). Im Zusammenhang mit Navigation könnte das Messsystem ein GPS-Satellit sein.

3.22**Pixel**

kleinstes Element eines digitalen *Bilds* (3.18), dem *Attribute* (3.1) zugewiesen sind

Anmerkung 1 zum Begriff: Ein Pixel ist die kleinste Anzeigeeinheit für ein sichtbares Bild.

[QUELLE: ISO/TS 19101-2:2008, 4.2, modifiziert – Anmerkung 1 zum Begriff ersetzt Anmerkung 1 und Anmerkung 2.]

3.23**Plattform**

Struktur, die einen *Sensor* (3.27) bzw. Sensoren trägt

3.24**Polarisation**

Beschränkung von Strahlungsschwingungen, vor allem von Licht, auf eine einzelne Ebene

3.25

Fernerkundung

Erfassen und Interpretieren von Informationen zu einem Objekt, ohne mit dem Objekt in physischem Kontakt zu stehen

[QUELLE: ISO/TS 19101-2:2008, 4.33]

3.26

Auflösung (eines Sensors)

kleinster Unterschied zwischen den Anzeigen eines *Sensors* (3.27), der sinnvoll unterschieden werden kann

Anmerkung 1 zum Begriff: Im Hinblick auf die *Bilddarstellung* (3.19) bezieht sich Auflösung auf die radiometrische, spektrale, räumliche und zeitliche Auflösung.

[QUELLE: ISO/TS 19101-2:2008, 4.34]

3.27

Sensor

Element eines Messsystems, das unmittelbar von einem Phänomen, einem Körper oder einer Substanz beeinflusst wird, das/der/die eine zu messende Größe trägt

[QUELLE: ISO/IEC GUIDE 99:2007, 3.8, modifiziert – Beispiele und Anmerkung gelöscht.]

3.28

spektrale Breite

spezifisches Wellenlängenintervall im elektromagnetischen Spektrum

BEISPIEL *Band* (3.2) 1 von Landsat TM liegt zwischen 0,45 µm und 0,52 µm im sichtbaren Teil des Spektrums.

3.29

Wert

Element eines *Typ-Bereichs* (3.8)

[QUELLE: ISO/IEC 19501:2005, 0000_5]

3.30

Wertebereich

Menge zulässiger *Werte* (3.29)

BEISPIEL Die Bereiche 3 bis 28, alle ganzen Zahlen, jedes beliebige ASCII-Zeichen, Aufzählung aller zulässigen Werte (Grün, Blau, Weiß).

[QUELLE: ISO 19103:2015, 4.37]

Nationaler Anhang NB (informativ)

Literaturhinweise

DIN EN ISO 19108:2005-05, *Geoinformation — Zeitliches Schema (ISO 19108:2002); Englische Fassung EN ISO 19108:2005*

DIN EN ISO 19109:2016-05, *Geoinformation — Regeln zur Erstellung von Anwendungsschemata (ISO 19109:2015); Englische Fassung EN ISO 19109:2015*

DIN EN ISO 19115-1:2014-07, *Geoinformation — Metadaten — Teil 1: Grundsätze (ISO 19115-1:2014); Englische Fassung EN ISO 19115-1:2014*

DIN EN ISO 19123:2007-06, *Geoinformation — Coverage Geometrie- und Funktionsschema (ISO 19123:2005); Englische Fassung EN ISO 19123:2007*

DIN EN ISO 19157:2014-04, *Geoinformation — Datenqualität (ISO 19157:2013); Englische Fassung EN ISO 19157:2013*

— Leerseite —

English Version

**Geographic information - Metadata - Part 2: Extensions for
acquisition and processing - Amendment 1 (ISO 19115-
2:2019/Amd 1:2022)**

Information géographique - Métadonnées - Partie 2:
Extensions pour l'acquisition et le traitement -
Amendement 1 (ISO 19115-2:2019/Amd 1:2022)

Geoinformation - Metadaten - Teil 2: Erweiterungen
für Erhebung und Verarbeitung - Änderung 1 (ISO
19115-2:2019/Amd 1:2022)

This amendment A1 modifies the European Standard EN ISO 19115-2:2019; it was approved by CEN on 6 October 2020.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This amendment 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 CEN-CENELEC Management Centre has the same status as the official versions.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

This document (EN ISO 19115-2:2019/A1:2022) 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 September 2022, and conflicting national standards shall be withdrawn at the latest by September 2022.

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

Any feedback and questions on this document should be directed to the users' national standards body/national committee. A complete listing of these bodies can be found on the CEN website.

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

Endorsement notice

The text of ISO 19115-2:2019/Amd 1:2022 has been approved by CEN as EN ISO 19115-2:2019/A1:2022 without any modification.

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).

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

For an explanation of 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 www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 211, *Geographic information/Geomatics*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 287, *Geographic Information*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

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

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Geographic information — Metadata —

Part 2:

Extensions for acquisition and processing

AMENDMENT 1

B.2, Table B.4

Replace Table B.4 with the following:

Table B.4 — Instrument identification

	Name	Definition	Obligation	Maximum occurrence	Data type	Domain
19.	MI_Instrument	characteristics of the measuring instrument	Use obligation from referencing object	Use maximum occurrence from referencing object	Aggregated Class (MI_Platform)	Lines 20 to 28
20.	citation	complete citation of the instrument	0	N	Class	< <DataType> > CI_Citation (ISO 19115-1:2014, Table B.16)
21.	identifier	unique identification of the instrument	M	1	Class	< <DataType> > MD_Identifier (ISO 19115-1:2014, Table B.17.2)
22.	type	name of the type of instrument Examples: framing, line-scan, push-broom, pan-frame	M	1	CharacterString	Free text
23.	description	textual description of the instrument	0	1	CharacterString	Free text
24.	otherProperty	instance of other property type not included in MI_Instrument	C/ otherPropertyType exists	1	Class	Record (ISO 19103)
25.	otherPropertyType	type of other property description	C/otherPropertyType exists	1	Class	RecordType (ISO 19103)
26.	<i>Role name:</i> mountedOn	platform on which the instrument is mounted	0	1	Association	MI_Platform (Table B.9)
27.	<i>Role name:</i> sensor	instrument has a sensor	0	N	Association	MI_Sensor (Table B.4)
28.	<i>Role name:</i> history	list of events associated with instrument	0	N	Association	MI_InstrumentationEventList (Table B.13)

NOTE The UML model for this table is shown in Figure 3.

Table B.4 *(continued)*

	Name	Definition	Obligation	Maximum occurrence	Data type	Domain
29.	MI_Sensor	specific type of instrument	Use obligation from referencing object	Use maximum occurrence from referencing object	Specified class (MI_Instrument)	Line 20–28 and 30
30.	<i>Role name:</i> hosted	instrument on which the sensor is hosted	0	N	Association	MI_Instrument (Table B.4)
NOTE The UML model for this table is shown in Figure 3.						

B.2, Table B.9

Replace Table B.9 with the following:

Table B.9 — Platform identification

	Name	Definition	Obligation	Maximum occurrence	Data type	Domain
69.	MI_Platform	designation of the platform used to acquire the data set	Use obligation from referencing object	Use maximum occurrence from referencing object	Aggregated Class (MI_Acquisition Information, MI_Operation)	Lines 70 to 76
70.	citation	source where information about the platform is described	0	1	Class	< <DataType> > CI_Citation (ISO 19115-1:2014, Table B.16)
71.	identifier	unique identification of the platform	M	1	Class	< <DataType> > MD_Identifier (ISO 19115-1:2014, Table B.17.2)
72.	description	narrative description of the platform supporting the instrument	M	1	CharacterString	Free text
73.	sponsor	organization responsible for building, launch, or operation of the platform	0	N	Class	< <DataType> > CI_Responsibility (ISO 19115-1:2014, Table 16.1)
74.	otherProperty	instance of other property type not included in MI_Sensor	0	1	Class	Record (ISO 19103)
75.	otherPropertyType	type of other property description	0	1	Class	RecordType (ISO 19103)
76.	<i>Role name:</i> instrument	instrument(s) mounted on a platform	M	N	Association	MI_Instrument (Table B.4)
76.1	<i>Role name:</i> history	list of events affecting a platform	0	N	Association	MI_InstrumentationEventList (Table B.13)

B.2, Table B.18

Replace Table B.18 with the following:

Table B.18 — Processing

	Name	Definition	Obligation	Maximum occurrence	Data type	Domain
115.	LE_Processing	comprehensive information about the procedure(s), process(es) and algorithm(s) applied in the process step	Use obligation from referencing object	Use maximum occurrence from referencing object	Aggregated Class (LE_ProcessStep)	Lines 116 to 123
116.	identifier	information to identify the processing package that produced the data	M	1	Class	< <DataType> > MD_Identifier (ISO 19115-1:2014, Table B.17.2)
117.	softwareReference	reference to document describing processing software	0	N	Class	< <DataType> > CI_Citation (ISO 19115-1:2014, Table B.16)
118.	procedureDescription	additional details about the processing procedures	0	1	CharacterString	Free text
119.	documentation	reference to documentation describing the processing	0	N	Class	< <DataType> > CI_Citation (ISO 19115-1:2014, Table B.16)
120.	runTimeParameters	parameters to control the processing operations, entered at run time	0	1	CharacterString	Free text
121.	otherProperty	instance of other property type not included in processing	0	1	Class	Record (ISO 19103)
122.	otherPropertyType	type of other property description	0	1	Class	RecordType (ISO 19103)
123.	<i>Role name:</i> algorithm	details of the methodology by which geographic information was derived from the instrument readings	0	N	Association	LE_Algorithm (Table B.16)
123.1	<i>Role name:</i> parameter	parameter(s) used in a process	0	N	Association	LE_ProcessParameter (Table B.19)

NOTE The UML model for this table is shown in Figure 4.

B.3, Table B.32

Replace Table B.32 with the following:

Table B.32 — MI_EventTypeCode < <CodeList> >

	Concept name (English)	Code	Definition
	MI_EventTypeCode		type of event related to platform/ instrument/sensor
1.	announcement	announcement	announcement about future events relevant to the platform/instrument/sensor
2.	calibration	calibration	calibration event for the platform/instrument/sensor
3.	calibrationCoefficientUpdate	calibrationCoefficientUpdate	update of calibration information for the platform/instrument/sensor
4.	dataLoss	dataLoss	event related to data loss
5.	fatal	fatal	event that renders the platform/instrument/sensor unusable
6.	manoeuvre	manoeuvre	event related to a manoeuvre of the platform/instrument/sensor
7.	missingData	missingData	event related to missing data from the platform/instrument/sensor
8.	notice	notice	notice about events related to the platform/instrument/sensor
9.	prelaunch	prelaunch	event related to prelaunch period for the platform/instrument/sensor
10.	severe	severe	event with significant impact on the performance of the platform/instrument/sensor
11.	switchOff	switchOff	event related to switching off platform/instrument/sensor
12.	switchOn	switchOn	event related to switching on platform/instrument/sensor
13.	clean	clean	event related to cleaning the platform/instrument/sensor

Annex C

Replace Annex C with the following:

Annex C (informative)

XML schema implementation

C.1 XML Schema

The XML schema for the UML model defined in this document is provided in the appropriate XML namespaces defined in ISO/TS 19115-3. The additions include:

Namespace prefix	Schema file name
Metadata for ACquisition (mac)	acquisitionInformationImagery.xsd metadataEntitySet.xsd
Metadata for Resource Content (mrc)	contentInformationImagery.xsd
Metadata for Resource Lineage (mrl)	lineageImagery.xsd
Metadata for Spatial Representation (msr)	spatialRepresentationImagery.xsd
Citation and responsible party information (cit)	citation.xsd

The XML Schemas for encoding this document can be found online at <https://schemas.isotc211.org/schemas/19115/> followed by the appropriate namespace abbreviation and the schema edition. The name and contact information of the Maintenance Agency for this document can be found at www.iso.org/maintenance_agencies.

C.2 XML Schemas defined outside this document

The XML schema extends and is intended to be used with the XML schemas provided in ISO/TS 19115-3 (<https://schemas.isotc211.org/schemas/19115/>).

This document also makes use of the namespace "dqc" in the XML implementation of ISO 19157 (<https://schemas.isotc211.org/schemas/19157/>).

C.3 Additional resources

To improve the usability of this document, several XML files are available for download in the 'resources' directory at <https://schemas.isotc211.org/schemas/19115/>. They are organized into three subdirectories: 'Codelists', 'namespaceInformationAndTools', and 'transforms'.

The XML files related to the utilization of codelists that are available for download are found in the 'Codelist' subdirectory of the 'resources' directory. The 'cat' subdirectory contains two files: codelists.html that contain an HTML listing of all codelists defined by ISO 19115-1, for presentation to humans. The codelists.xml file contains all codelists defined by ISO 19115-1 encoded using the XML schema from the cat namespace defined in this document. The 'gml' subdirectory in the 'Codelist' subdirectory contains individual files for each codelists defined by ISO 19115-1, encoded using the GML Dictionary schema.

English Version

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

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

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

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EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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This document supersedes EN ISO 19115-2:2010.

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Endorsement notice

The text of ISO 19115-2:2019 has been approved by CEN as EN ISO 19115-2:2019 without any modification.

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Symbols and abbreviated terms	4
4.1 Abbreviated terms	4
5 Conformance	5
5.1 Conformance requirements	5
5.2 Metadata profiles	5
6 Acquisition and processing metadata	5
6.1 Metadata for acquisition and processing requirements	5
6.2 Acquisition and processing metadata packages and dependencies	5
6.3 Acquisition and processing metadata class diagrams by package	6
6.3.1 Introduction	6
6.3.2 Acquisition Information	7
6.3.3 Extended Lineage information	10
6.3.4 Extended spatial representation information — Geolocation information	11
6.3.5 Extended Content information — Imagery	13
Annex A (normative) Conformance	15
Annex B (normative) Acquisition and processing metadata data dictionary	18
Annex C (informative) XML schema implementation	56
Bibliography	57

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).

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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.