

# Using the latest ISO Standard for Geographic Information (ISO19115-1) for an INSPIRE Discovery Service

Use case in Wallonia Region  
Implementation in GeoNetwork3



INTERNATIONAL  
STANDARD

ISO  
19115-1

First edition  
2014-04-01

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Francois Prunayre and Vincent Bombaerts

Geographic information —  
Metadata —

Part 1:  
Fundamentals

Information géographique — Métadonnées —  
Partie 1: Principes de base



Wallonie

# Metawal

In 2013, discussion about improving description of spatial resources

- 1) Create/Improve ISO19139 profile
- 2) Move to ISO19115-1

The screenshot shows the homepage of the Metawal catalog. At the top, there's a search bar with placeholder text "Rechercher dans le catalogue" and a "Rechercher" button. Below the search bar, there's a section for "Dernières publications" featuring links to "Orthophotos 2009-2010", "Les Voies lentes en Wallonie...", and "Voies lentes en Wallonie (RAVel)". To the right of these links is a sidebar titled "Liens rapides" containing various categories such as Agriculture, Données de base, Données topographiques Eau, Faune et flore, Industrial et services, Logement et habitat, Mobilité, Nature et environnement, Plans et réglements, Risques et contraintes, Société et activités, Sol et sous-sol, and Tourisme et loisirs. At the bottom of the page, there are links for "Mentions légales", "Vie privée", "Métafichier", "Accessibilité", and social media icons.

# ISO19115-1 published in April 2014

INTERNATIONAL  
STANDARD

ISO  
**19115-1**

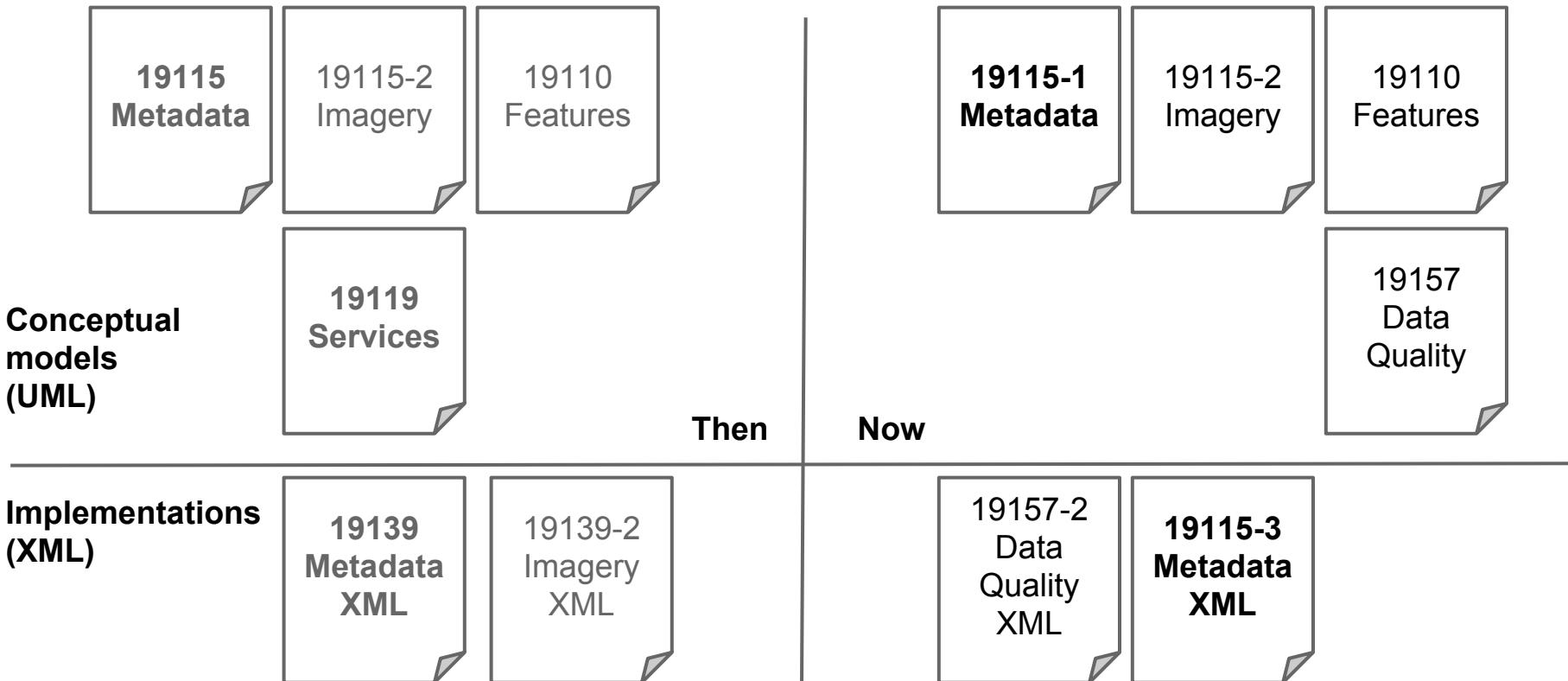
First edition  
2014-04-01

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**Geographic information —  
Metadata —  
Part 1:  
Fundamentals**

*Information géographique — Métadonnées —  
Partie 1: Principes de base*

# “I am confused by all these numbers!”



# Implementation work

Available on github

The screenshot shows the GitHub repository page for ISO TC211 XML. At the top, the URL is https://github.com/ISO-TC211/XML. The repository has 166 commits, 18 branches, 0 releases, and 3 contributors. A pull request from smrazgs is visible, along with a list of recent commits. The README.md file is also shown.

XML schema, transforms, schematron rules, and examples for ISO TC211 Metadata Standards

166 commits 18 branches 0 releases 3 contributors

Merge pull request #79 from ISO-TC211/remove-19111-in-standards.iso.org ...

smrazgs authored 22 days ago latest commit 67ab3a719b

File	Commit Message	Date
ISO19110	2014-12-25 directories	2 months ago
ISO19115-2/gml/1.0	Files removed by accident	3 months ago
ISO19115-3	2014-12-25 directories	2 months ago
ISO19135	2014-12-25 directories	2 months ago
ISO19157-2	2014-12-25 directories	2 months ago
MaintenanceTools	Fixed everything again	a month ago
resources	Valid transform result	27 days ago
standards.iso.org	remove rce import	22 days ago
README.md	Update README.md	27 days ago

README.md

## XML

XML schema, transforms, schematron rules, and examples for ISO TC211 Metadata Standards

This repository contains draft XML schema and related documents for the ISO TC211 metadata (ISO 19115-1) and data quality (ISO 19157). These are not final schemas for these standards but may be suitable for initial testing and familiarization. They are provided here to support those kinds of use cases without any expectation for persistence.

# Implementation contains

the schemas  
XSDs for each standards

branch: master		XML / standards.iso.org	/ +
remove rce import		...	
	smrazgs	authored 22 days ago	
..			
	19110	Finally got the index files right!	
	19115	remove rce import	
	19135/-2	gco schema location	
	19139	move timeDuration from gmw to gco	
	19157/-2	Finally got the index files right!	

# Each packages contains

XSDs

Multilingual  
schematron  
rules

Diagrams

branch: master ➔ XML / standards.iso.org / 19115 / -3 / mdb / 1.0 / 2014-12-25 / +	
Schematron / Move rules and testing files to packages.	
 fxprunayre	authored 27 days ago
..	
 MD_Metadata.xml	Remove useless namespaces to sample record.
 index.html	Finally got the index files right!
 mdb.png	updated namespace information files
 mdb.sch	Schematron / Move rules and testing files to packages.
 mdb.xsd	Fixed everything again
 mdb_invalid.xml	Schematron / Move rules and testing files to packages.
 mdb_valid.xml	Schematron / Move rules and testing files to packages.
 metadataBase.xsd	Fixed everything again

# Implementation contains also

How to  
migrate  
from/to  
ISO19139 ?

branch: master → XML / resources / transforms / +

center-to-centre ...

 tedhabermann authored 28 days ago

..

<a href="#">CI_Citation.xsl</a>	Small date problems fixed
<a href="#">CI_ResponsibleParty.xsl</a>	Update XSLT to the new namespaces.
<a href="#">DateTime.xsl</a>	Small date problems fixed
<a href="#">ISO19115-3toISO19139.xsl</a>	Update XSLT to the new namespaces.
<a href="#">ISO19139to19115-3.xsl</a>	center
<a href="#">create19115-3Namespaces.xsl</a>	
<a href="#">multiLingualCharacterStrings.xsl</a>	
<a href="#">schema-utility.xsl</a>	Ex

Also used for having  
INSPIRE CSW  
endpoint

# Implementation

Will be published on standards.iso.org

The screenshot shows a web browser window displaying the ISO Standards Maintenance Portal. The URL in the address bar is [standards.iso.org/iso/19115/-3](http://standards.iso.org/iso/19115/-3). The page title is "ISO Standards Maintenance Portal". Below the title, the path [/ iso / 19115 / -3](#) is shown. A table lists five subfolders under the heading "Type Name":

Type	Name
cat/	<a href="#">cat/</a>
cit/	<a href="#">cit/</a>
gcx/	<a href="#">gcx/</a>
lan/	<a href="#">lan/</a>
mcc/	<a href="#">mcc/</a>

# ISO19115-3 GeoNetwork plugin



# The ISO19115-3 plugin

Supported in [GeoNetwork 3+](#)

All features supported by ISO19139  
(search, view, edit, multilingual,  
validation)



admin admin (Administrator)

Sign out

English



Metadata &amp; templates

Formatter

Schematron

Load samples and templates for metadata standards

## Standards available

0 selected▼

### Dublin Core - CSW

Metadata records produced by CSW services.

### Dublin Core

The Dublin Core metadata standard

### Geographic information - Methodology for feature cataloguing (ISO 19110:2005)

ISO 19110 standard for describing Feature Types

### Geographic information - Metadata (ISO ISO19115-3)

iso19115-3 metadata standard

### Geographic information - Metadata (ISO/TS 19139:2007)

ISO19139 metadata standard



admin admin (Adm)

## Create a

Create a  
Dataset



Dataset



Map



Service

From Multilingual template for Vector  
data

Multilingual template for Vector  
data

Template for Vector data  
(preferred!)

Template for map

+ Create



## ▼ Identification info

Title \* Banque de Données des Conditions de navigation (BDCN)

Alternate title BDCN

Date \* Creation 01/01/1996 12:00

Date \* Publication 01/01/1996 12:00

Date \* Revision 01/01/2009 12:00

## ▼ Identifier

Code \* # Ne pas remplir #

Codespace <http://geoportail.wallonie.be/ressources/id/>

Recommended

Abstract \* Rassemble les dispositions temporaires de navigation sur l'ensemble des voies navigables. Permet d'établir pour chaque voie la liste de ces dispositions toujours d'actualité. Le positionnement géographique des événements perturbateurs -voie, cumulée, rive, etc.- est essentiel pour l'usager.

N.B. :

- il s'agit de dérogations temporaires aux dispositions réglementaires, elles

### Associated resources

### Online resources

fichier xml des avis à la batellerie et évènements d'actualité, selon norme SIF-RIS garantissant l'interopérabilité.

Service -Site internet

### Validation



0 / 1

Compliance to metadata standard (XML Schema)

0 Error

XSD Validation Error

0 / 0

INSPIRE rules

26 / 26

Règles de validation pour le standard ISO 19115-1:2014

# The ISO19115-3 plugin

Includes also DataQuality, Imagery,  
Feature catalogue sections

Translated in English & French

# Published in metadata101

<https://github.com/metadata101/iso19115-3>

```
<metadata>
  <title>Metadata 101 </title>
  <subject>A repository of metadata profiles</subject>
</metadata>
```

This website hosts metadata profiles developed for use in catalog systems. Metadata documents describe data. Metadata profiles are usually subsets of existing metadata standards developed by subject matter expert groups.

Examples of such metadata profiles are the set of XML schema's and Schematron rules that define the structure of a particular metadata file like Dublin Core, ISO19139 and others.

# “The ISO standards are evolving”

Wallonia  
Problem solved by the new standard



# Identifying metadata records

A codespace is added to the metadata identifier for unambiguous identification.

Identifier

Code *	598d9bb4-855d-43e0-bad9-52e1afb8d588
Codespace	be.wallonie.metawal

# Point of truth URL

## ▼ Metadata linkage

Linkage \*

<http://apps.titellus.net/geonetwork/srv/eng/metadata/a68db6b9-e05f-4075-aca6-34399a7fd194>

Function

Complete Metadata



INSPIRE Download service Gebiedsbeheer, gebieden waar beperkingen gelden, gereguleerde gebieden en rapportage-eenheden



INSPIRE View service Gebiedsbeheer, gebieden waar beperkingen gelden, gereguleerde gebieden en rapportage-eenheden



Geluidszones vliegvelden waarvoor de provincie verunningen verleent en toezicht houdt



Windsnelheden op 100m hoogte in m/s



Third party app harvesting records



Relief de la Wallonie - Modèle Numérique de Terrain (MNT) 2013-2014 - Sans interpolation

Relief de la Wallonie - Modèle Numérique de Terrain (MNT) 2013-2014 - Sans interpolation

Modèle Numérique de Terrain (MNT) non-interpolé de la Wallonie d'une résolution d'un mètre issu d'acquisitions Lidar effectuées entre le 12/12/2012 et le 09/03/2014.

Certaines parties du territoire (notamment les plans d'eau et les zones bâties) n'ont pu faire l'objet d'une acquisition de données par la méthode Lidar. Ces zones sont caractérisées par la valeur "NoData". Cela a pour conséquence que le MNT n'est pas continu sur l'ensemble de la Wallonie. Néanmoins, une interpolation pour combler les "petits trous" a été effectuée.

S'il vous souhaitez une couverture complète du territoire, vous pouvez préférentiellement la donnée "Relief de la Wallonie - Modèle Numérique de Terrain (MNT) 2013-2014" (<http://geospatial.wallonie.be/mnt/rendervis/tilles/4320-10a-05e77f7af92>) pour laquelle toutes les valeurs manquantes ont été combinées par interpolation.

Le système de coordonnées de la donnée est le Lambert Belgique 72 (EPSG:31370). La référence altimétrique est le Deuxième Nivellement Général (EPSG:5710). La précision planimétrique est inférieure à la résolution du MNT (1 m), et la précision altimétrique est de l'ordre de 0,12 m en absolu sur l'ensemble du territoire.

Médonnées des services et applications associées

Voir cette donnée sur WalOnMap

ESRI-REST GeoService

Service de visualisation REST

OGC-WMS Web Map Service

Service de visualisation WMS

Comprendre la ressource

Date(s) de référence

2015-02-17 (Création: Date à laquelle la ressource est créée)  
2015-02-17 (Révision: Date à laquelle la ressource est révisée)

Référence(s) temporelle(s)

Date de début: 2012-12-12  
Date de fin: 2014-03-09

Aperçu

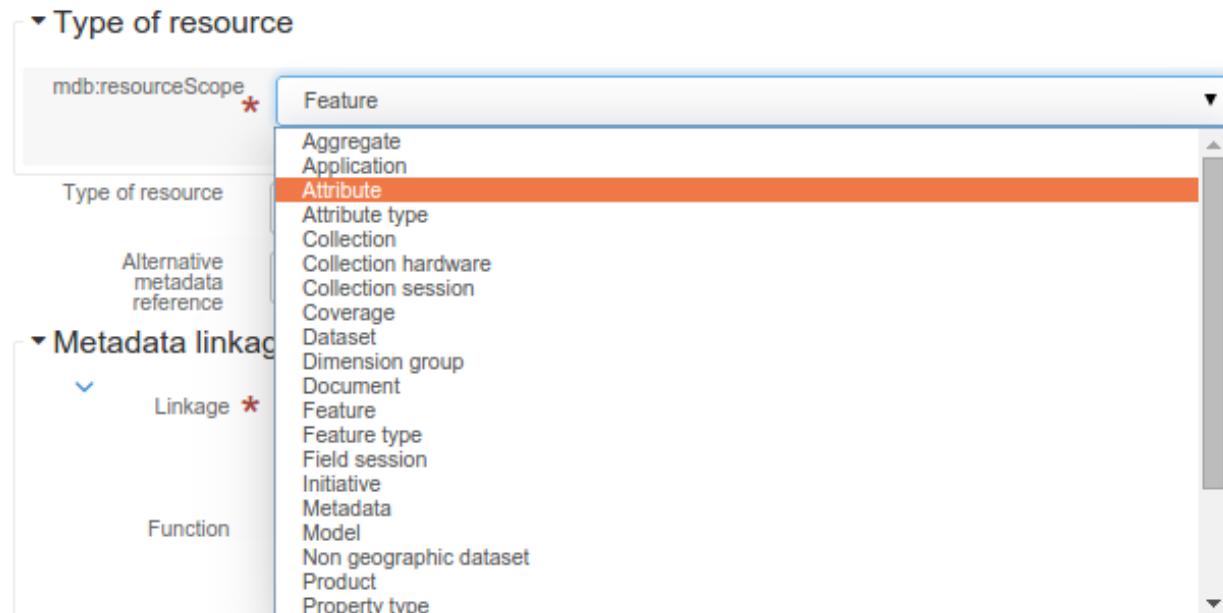
Mots clés

MNT, Terrain, DNG, Z, LIDAR, Sol, Modélisation, DTM, Topographie

"Have access to other representations of the metadata (other format and/or other content)"

# Different types of resources

Metawal is  
also  
cataloging  
maps & apps.



# Tracking life cycle

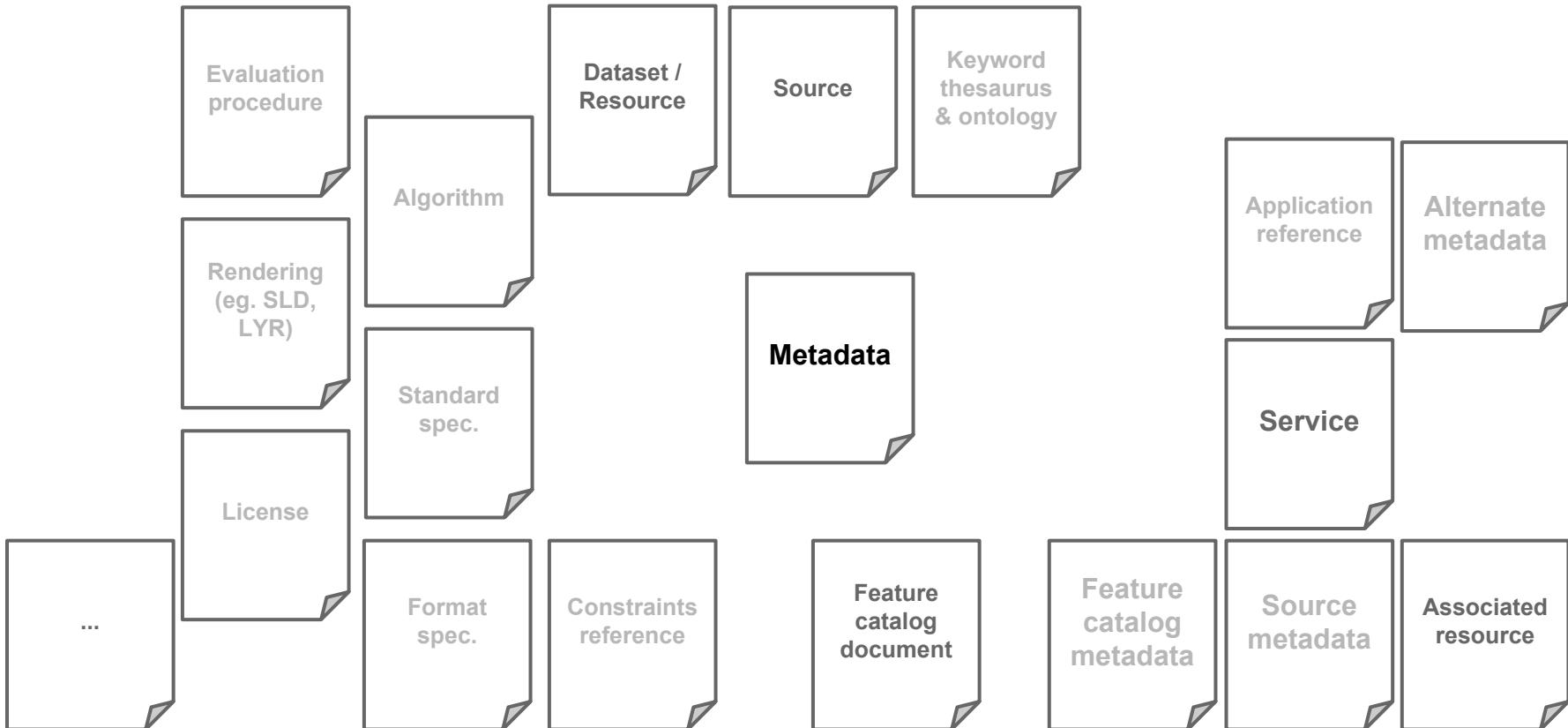
Date includes  
13 new data  
types

The screenshot shows a software interface for managing document metadata. A dropdown menu is open under the 'Date' field, listing 13 new data types related to the document's life cycle. The menu items are:

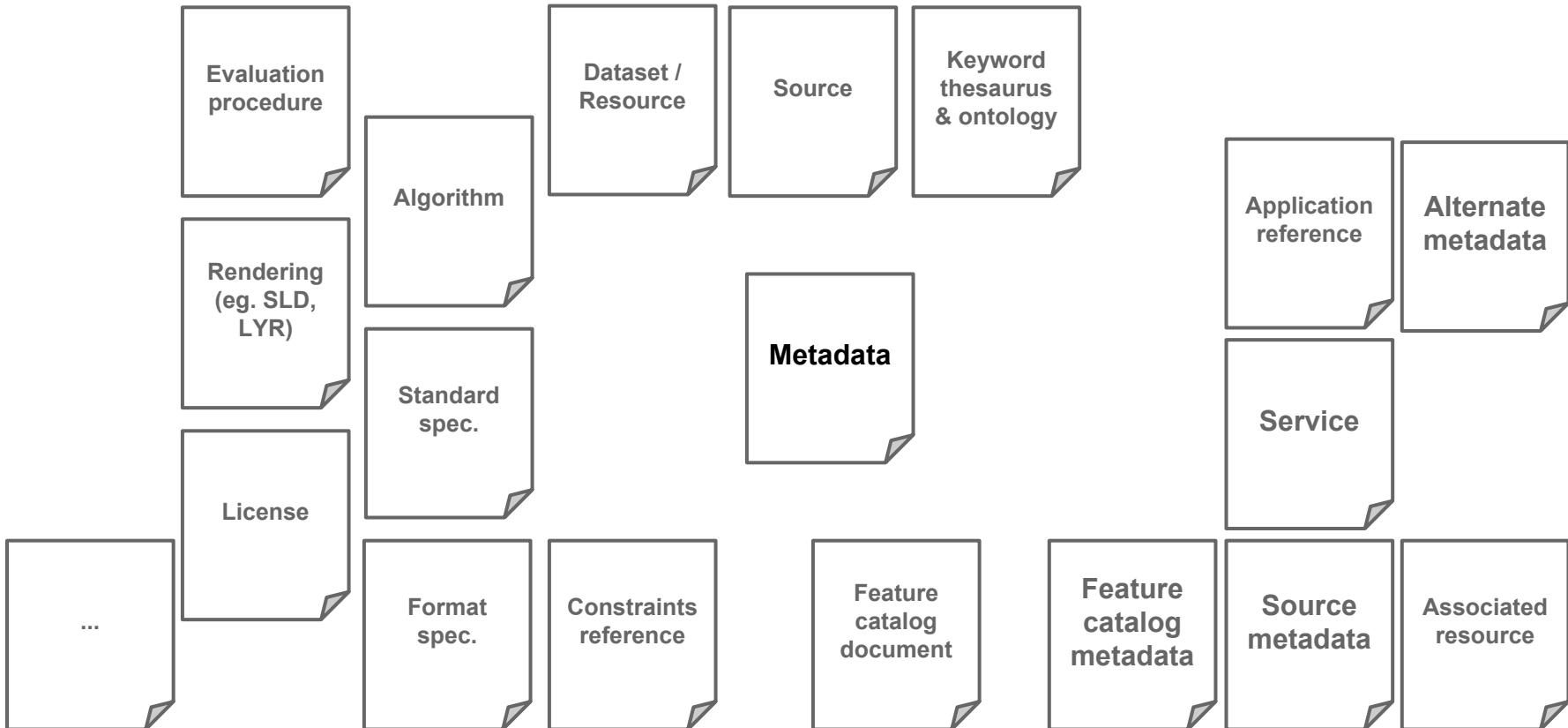
- Adopted
- Creation
- Deprecated
- Distribution
- Expiry
- In Force
- Last Review
- Last Update
- Next Update** (highlighted in orange)
- Publication
- Released
- Revision
- Superseded
- Unavailable
- Validity Begins
- Validity Expires

Other visible fields include 'Edition' (with a dropdown arrow), 'On date' (with a dropdown arrow), 'Citation identifier' (with a dropdown arrow), 'Cited by' (with a dropdown arrow), 'Contributor' (with a dropdown arrow), and 'Annotation' (with a dropdown arrow). The top right corner shows a date range from 'November 2015' to '11/26/20'.

# Connecting other documentation



# Connecting other documentation



# Connecting other documentation

“A reference to documents where there is more information about the resource”

The citation now support:

- online resource
- graphics

# Connecting rendering style

QML, SLD, LYR  
could be described  
in the metadata  
record.

## Informations sur la représentation

Titre \* Fichier de rendu de la couche vecteur pour le type NIVEAU1

Adresse Internet \* <http://style.data.wallonie.be/occsol/niveau1.lyr>

Protocole ESRI:LYR

Nom Fichier de style pour ArcMap

Adresse Internet \* <http://style.data.wallonie.be/occsol/niveau1.qgs>

Protocole QGIS:STYLE

Nom Fichier de style pour QGIS

# Describing feature catalogue

## By citation or embedded

▼ Description d'une propriété

Définition	Table des communes
Code	COMMUNE
Elément abstrait *	<input type="checkbox"/>

▼ Caractéristiques des attributs

Définition	Code de la commune
Cardinalités *	1..1
Code	CD_COM
Nom du type *	INTEGER
Valeurs recommandées	▼

Attribute name	Definition																		
VALUE (INTEGER)	List of values																		
	<table><thead><tr><th>Name</th><th>Code</th><th>Definition</th></tr></thead><tbody><tr><td>Low coasts</td><td>1</td><td>Areas within 10km from the coastline and with an elevation below 50m.</td></tr><tr><td>High coasts</td><td>2</td><td>Areas within 10km from the coastline and with an elevation above 50m.</td></tr><tr><td>Inlands</td><td>3</td><td>Areas between 0 and 200 m outside the coastal strip.</td></tr><tr><td>Uplands</td><td>4</td><td>Zones between 200 and 500 m plus the flat areas between 500 and 1000m.</td></tr><tr><td>Mountains</td><td>5</td><td>Slopy areas between 500 and 1000m and all the areas over 1000m.</td></tr></tbody></table>	Name	Code	Definition	Low coasts	1	Areas within 10km from the coastline and with an elevation below 50m.	High coasts	2	Areas within 10km from the coastline and with an elevation above 50m.	Inlands	3	Areas between 0 and 200 m outside the coastal strip.	Uplands	4	Zones between 200 and 500 m plus the flat areas between 500 and 1000m.	Mountains	5	Slopy areas between 500 and 1000m and all the areas over 1000m.
Name	Code	Definition																	
Low coasts	1	Areas within 10km from the coastline and with an elevation below 50m.																	
High coasts	2	Areas within 10km from the coastline and with an elevation above 50m.																	
Inlands	3	Areas between 0 and 200 m outside the coastal strip.																	
Uplands	4	Zones between 200 and 500 m plus the flat areas between 500 and 1000m.																	
Mountains	5	Slopy areas between 500 and 1000m and all the areas over 1000m.																	

# Aggregates

Link a resource to the current metadata

Association type: Larger work citation

Initiative type: Collection

Search:  Search

Maquette 3D texturée de la collection

Link to other resources

Larger work citation  
Collection  
Campaign  
Collection  
Exercise  
Experiment  
Investigation  
Mission  
Sensor  
Operation  
Platform  
Process  
Program  
Project  
Study  
Task  
Trial

Maquette 3D texturée de Lyon) (largerWorkCitation /

«CodeList»	
DS_AssociationTypeCode	
+ crossReference	
+ largerWorkCitation	
+ partOfSeamlessDatabase	
+ stereoMATE	
+ isComposedOf	
+ collectiveTitle	
+ series	
+ dependency	
+ revisionOf	

«CodeList»	
DS_InitiativeTypeCode	
+ campaign	
+ collection	
+ exercise	
+ experiment	
+ investigation	
+ mission	
+ sensor	
+ operation	
+ platform	
+ process	
+ program	
+ project	
+ study	
+ task	
+ trial	

# Constraints

“Reference the licence or the law that applies”

## ▼ Resource constraints

Hierarchy level \*

Dataset



File name \*

<https://creativecommons.org/images/deed/nolaw.png>



Title \*

CC0 1.0 Universal

Linkage \*

<https://creativecommons.org/publicdomain/zero/1.0/>

# Constraints

“Know who can access the data”

▼ Acteur

Nom	Autorité publique
<hr/>	
Indication	Accès libre et gratuit pour les autorités publiques

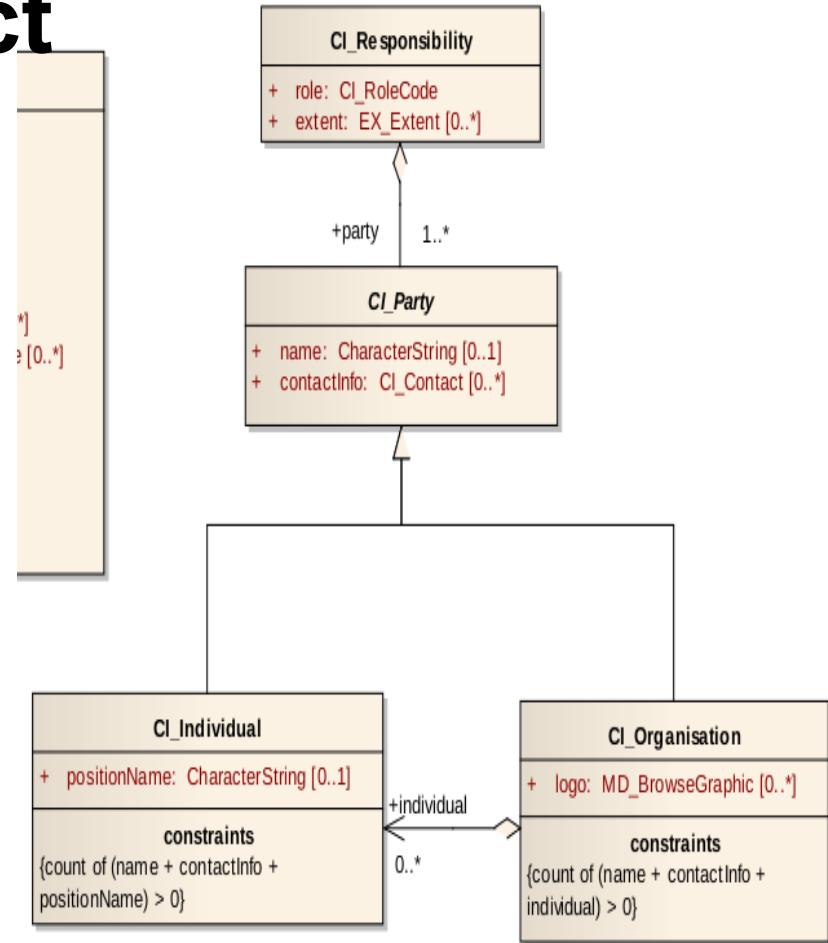
# Constraints

“Know who can access the data”

▼ Acteur

Nom	Société privée dans le cadre d'un marché public
Indication	Donnée accessible aux prestataires de marché public dans le cadre strict de la réalisation du marché
Contraintes de diffusion	Licence

# More flexible contact & organisation



# Data quality to evaluate usage

Ongoing work to populate quality information  
on the MedSea checkpoint project

The screenshot shows a user interface for managing data quality information. At the top, there is a search bar with a plus sign icon and an 'x' icon. Below it, a section titled "Data quality info" contains a list of items, each with a plus sign icon to its left:

- DQ\_AbsoluteExternalPositionalAccuracy / Depth horizontal position accuracy better than 250m
- DQ\_CompletenessCommission / Excess item** (This item is highlighted with a blue background)
- DQ\_CompletenessOmission / Missing item
- DQ\_ConceptualConsistency / Conceptual schema non-compliance
- DQ\_DomainConsistency / Number of items not in conformance with their value domain
- DQ\_DomainConsistency / Value domain conformance

# **Using ISO19115-3 for INSPIRE ?**

# IR for INSPIRE

“Use ISO19115/119”

“Use of ISO 19139 in the context of a  
Catalogue Service”

= A conversion from ISO19115-3 to ISO19139  
is required and rules need to be defined

# TG for INSPIRE discovery service

**Implementation Requirement 1** An INSPIRE Discovery Service shall implement the mandatory behaviour of a [CSW ISO AP] compliant service and the extensions as required by the INSPIRE Directive and its associated Regulations.

= ISO19115-3 record should be accessible  
using CSW

The screenshot shows the Metawal - All Wallonia in metadata admin console interface. At the top, there is a logo of a red rooster and the text "Metawal - All Wallonia in metadata". Below the logo, it says "Wallonie". On the left, there are navigation links: "+ Contribute", "Admin console", "Settings", "Logo", "Sources", "CSW" (which is highlighted in blue), "Virtual CSW" (which is also highlighted in blue), "CSW test", and "Map servers".

The main content area is titled "Virtual CSW". It lists three existing virtual CSW configurations: "csw-cadgis", "csw-inspire", and "csw-opendata". Below this list is a blue button labeled "+ New virtual CSW".

To the right, there is a section titled "Update csw-inspire (capabilities)". It includes a "Delete" button (red) and a "Save" button (blue). Below this, there is a "Service description" section with fields for "Name" (set to "csw-inspire") and "Description". A note states: "The virtual CSW name MUST start with csw-." Below the "Description" field, it says: "A short description of this endpoint." There is a link "Explicit Query (advanced) Show".

At the bottom, there is a "Filters" section with an "Add filter" button. Two filters are listed: "keyword" and "inspire". A note below the filters says: "Clause MUST match ▾".

# A virtual CSW for INSPIRE

## CSW request

csw-GetRecords | filter "service"

```
<?xml version="1.0"?>
<csw:GetRecords xmlns:csw="http://www.opengis.net/cat/csw/2.0.2" service="CSW" version="2.0.2"
  resultType="results" outputSchema="own">
  <csw:Query typeNames="gmd:MD_Metadata">
    <csw:Constraint version="1.1.0">
      <Filter xmlns="http://www.opengis.net/ogc" xmlns:gml="http://www.opengis.net/gml">
        <PropertyIsLike wildCard="#" singleChar="_" escapeChar="\\">
          <PropertyName>AnyText</PropertyName>
        <literal>%service%</literal>
```

▶ Send CSW request

## CSW response

```
<?xml version="1.0" encoding="UTF-8"?>
<csw:GetRecordsResponse xmlns:csw="http://www.opengis.net/cat/csw/2.0.2" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://www.opengis.net/cat/csw/2.0.2 http://schemas.opengis.net/csw/2.0.2/CSW-discovery.xsd">
  <csw:SearchStatus timestamp="2015-05-26T08:40:03" />
  <csw:SearchResults numberOfRecordsMatched="103" numberOfRecordsReturned="10" elementSet="full">
    <mdb:MD_Metadata xmlns:mdb="http://standards.iso.org/19115/-3/mdb/1.0" xmlns:cat="http://standards.iso.org/19115/-3/cat/1.0" xmlns:gxc="http://standards.iso.org/19115/-3/gxc/1.0" xmlns:lan="http://standards.iso.org/19115/-3/lan/1.0" xmlns:srv="http://standards.iso.org/19115/-3/srv/1.0" xmlns:mcc="http://standards.iso.org/19115/-3/mcc/1.0" xmlns:mco="http://standards.iso.org/19115/-3/mco/1.0" xmlns:mda="http://standards.iso.org/19115/-3/mda/1.0" xmlns:mds="http://standards.iso.org/19115/-3/mds/1.0" xmlns:mdt="http://standards.iso.org/19115/-3/mt/1.0" xmlns:mex="http://standards.iso.org/19115/-3/mex/1.0" xmlns:mmi="http://standards.iso.org/19115/-3/mmi/1.0" xmlns:mpc="http://standards.iso.org/19115/-3/mpc/1.0" xmlns:mrc="http://standards.iso.org/19115/-3/mrc/1.0" xmlns:mrd="http://standards.iso.org/19115/-3/mrd/1.0" xmlns:mrl="http://standards.iso.org/19115/-3/mrl/1.0" xmlns:mrs="http://standards.iso.org/19115/-3/mrs/1.0" xmlns:mdq="http://standards.iso.org/19115/-2/mdi/1.0" xmlns:mac="http://standards.iso.org/19115/-3/mac/1.0" xmlns:gco="http://standards.iso.org/19115/-3/gco/1.0" xmlns:gml="http://www.opengis.net/gml/3.2" xmlns:geonet="http://www.fao.org/geonetwork">
      <mdb:metadataIdentifier>
        <mcc:MD_Identifier>
          <mcc:code>
```

## CSW request

csw-GetRecords | filter "service"

```
<?xml version="1.0"?>
<csw:GetRecords xmlns:csw="http://www.opengis.net/cat/csw/2.0.2" service="CSW" version="2.0.2"
  resultType="results" outputSchema="csw:isoRecord">
  <csw:Query typeNames="gmd:MD_Metadata">
    <csw:Constraint version="1.1.0">
      <Filter xmlns="http://www.opengis.net/ogc" xmlns:gml="http://www.opengis.net/gml">
        <PropertyIsLike wildCard="#" singleChar="_" escapeChar="\\">
          <PropertyName>AnyText</PropertyName>
        <literal>%service%</literal>
```

▶ Send CSW request

## CSW response

```
<?xml version="1.0" encoding="UTF-8"?>
<csw:GetRecordsResponse xmlns:csw="http://www.opengis.net/cat/csw/2.0.2" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://www.opengis.net/cat/csw/2.0.2 http://schemas.opengis.net/csw/2.0.2/CSW-discovery.xsd">
  <csw:SearchStatus timestamp="2015-05-26T08:40:26" />
  <csw:SearchResults numberOfRecordsMatched="103" numberOfRecordsReturned="10" elementSet="full">
    <gmd:MD_Metadata xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:gco="http://www.isotc211.org/2005/gco" xmlns:srv="http://www.isotc211.org/2005/srv" xmlns:gmx="http://www.isotc211.org/2005/gmx" xmlns:gmi="http://www.isotc211.org/2005/gmi" xmlns:xlink="http://www.w3.org/1999/xlink">
      <gmd:fileIdentifier>
        <gco:CharacterString>3e501c87-9146-4d9b-9237-8165c8f7cd51</gco:CharacterString>
      </gmd:fileIdentifier>
      <gmd:language>
        <gmd:LanguageCode codeList="http://www.loc.gov/standards/iso639-2/" codeListValue="" />
      </gmd:language>
      <gmd:characterSet>
        <gmd:MD_CharacterSetCode codeListValue="utf8" codeList="http://www.isotc211.org/namespaces/isotc211/2005/gmd">utf8</gmd:MD_CharacterSetCode>
      </gmd:characterSet>
      <gmd:parentIdentifier>
        <gco:CharacterString />
      </gmd:parentIdentifier>
```

# The ISO19115-3 plugin / What's next?

Improve associated resources management

Improve directory support (for licenses,  
graphics, ...)

Workflow eg. obsolete/superseded record

Use feature catalogue for data preview in the  
mapviewer

FGDC to ISO19115-3 conversion

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