

GGOS-Portal

Feasibility Study and Perspectives

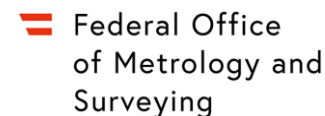
Preliminary Results



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GGOS Days 2023
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ggos.org/portal

Feasibility Study



Collecting information

→ Creating + evaluating the survey



List of geodetic data, products and their available metadata

→ IAG-Services, ...



Requirement profile of the software packages

→ based on the community survey



Test of the software packages

→ metadata harvesting tools

Possible Software Packages



		GN	CKAN
Search	temporal	✓	✓
	spatial	✓	✓
	API	✓	✓
	keywords	✓	✓
Edit	create	✓	✓
	sort	✓	✓
	validate	✓	✓
	edit	✓	✓

		GN	CKAN
Harvest	Geonetwork	✓	X
	URL	✓	✓
	OAI/PHM	✓	~
	XML File System	✓	~
Interface	Standard/schema transformation	✓	~
	link resources	✓	✓
	create DOI	✓	✓

✓ works well
 ~ works partly
 X does not work

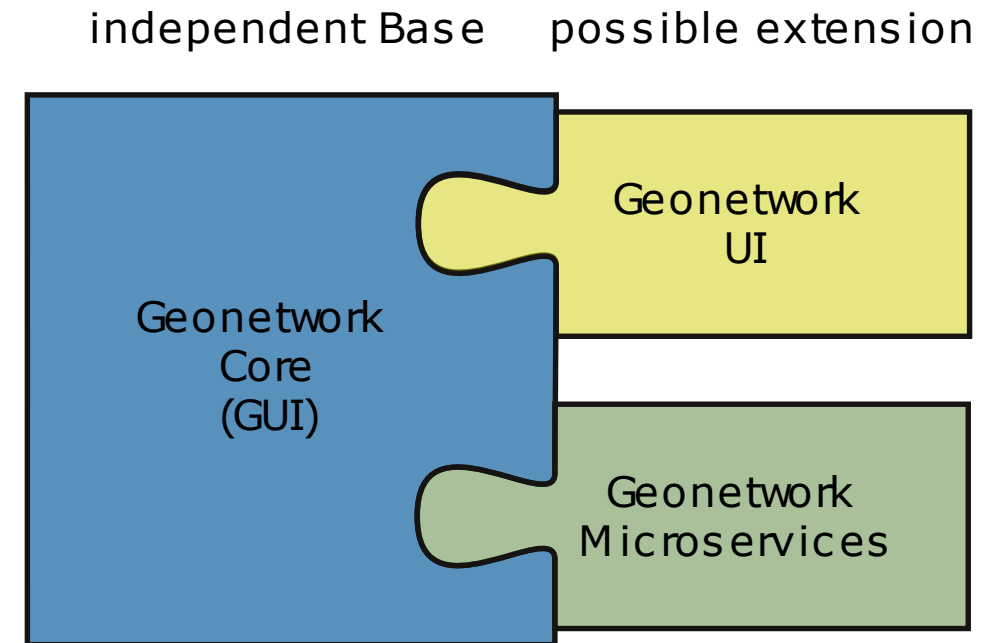
Best Software Package



- + Good tools to harvest geospatial/geodetic metadata
- + Well established and maintained Software
- + Continuous further developments
-> Geonetwork UI & Microservices



- Extensions are partly outdated and no longer maintained



Harvesting Methods



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Settings

Identification

Node name and logo

The name describing the remote node.



Group

Group which owns the harvested records. Only the catalog administrator or user admin of this group can manage this node.

User

User who owns the harvested records

URL/Directory

XSL transformation to apply

...

further configurations

Delete Save Harvest

Schedule

Enable disable

Frequency

Only one run

This harvester will run once only.



Goals/Targets:

- automatic synchronization of metadata
- creation of Metadata remains Dataprovider

Results

Last run : a minute ago

Harvested records

Total	Updated	Unchanged
10	0	9

10 record(s) harvested in 10 seconds

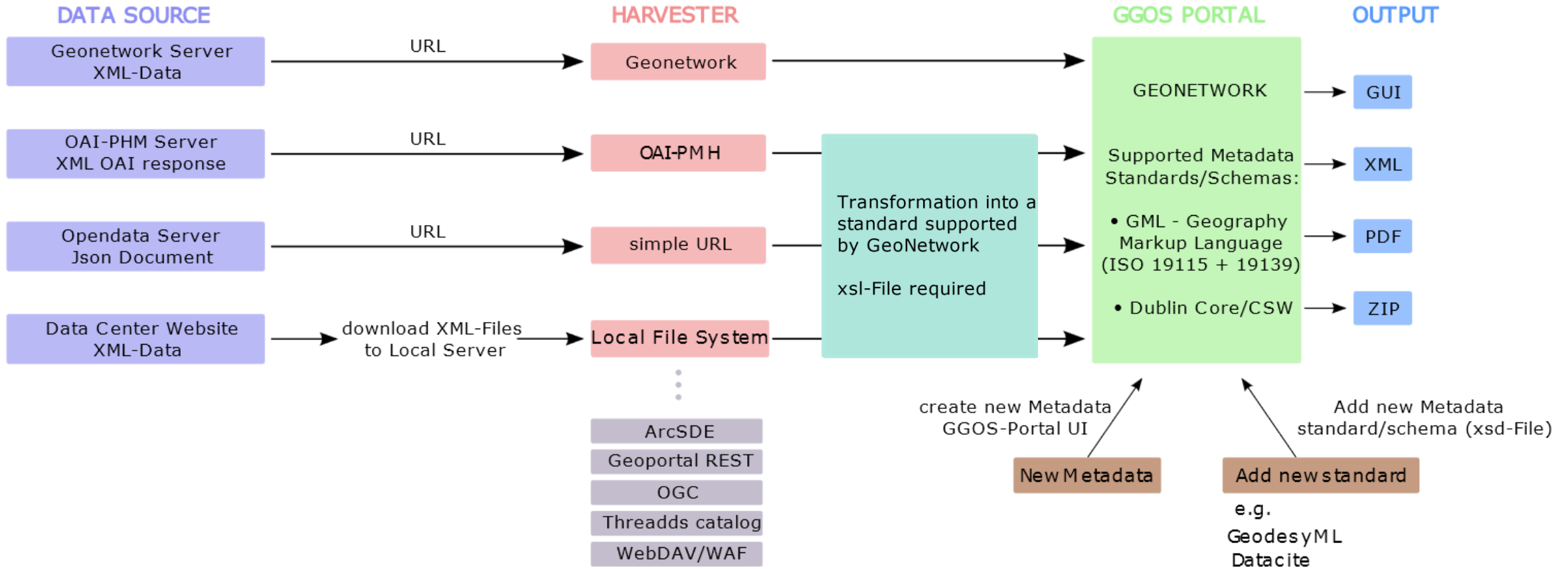
a minute ago

- added: 1
- total: 10
- unchanged: 9


Harvesting Methods



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Transformation

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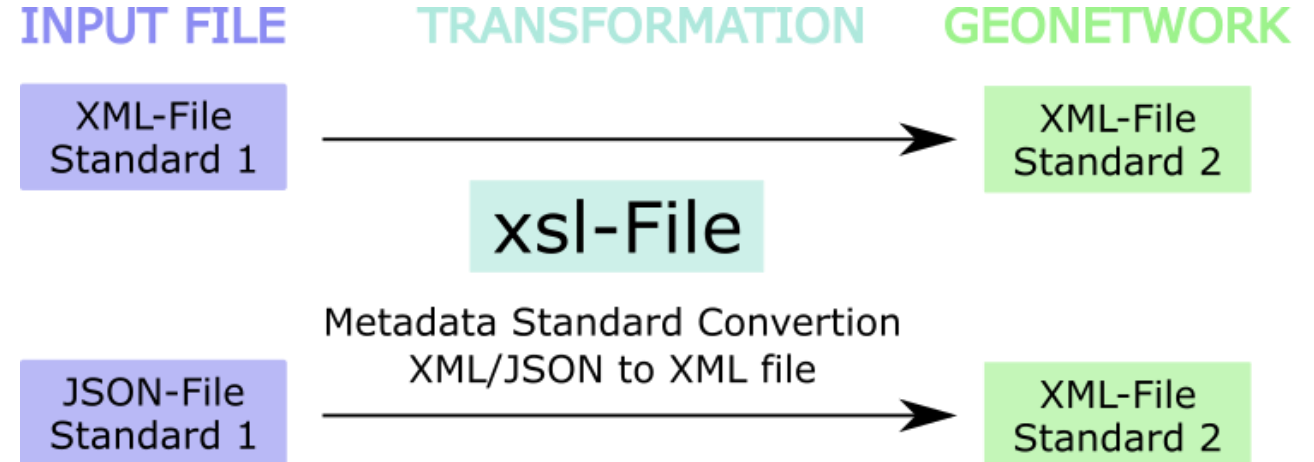
Transformation into a
standard supported
by GeoNetwork

xsl-File required

Transformation

Transformation into a
standard supported
by GeoNetwork

xsl-File required



Metadastandards/schemas

xsd File = defines metadata standard/schema

Already supported standards
in GeoNetwork

Geography Markup Language- GML
‣ ISO19139
‣ ISO19115

Dublin Core

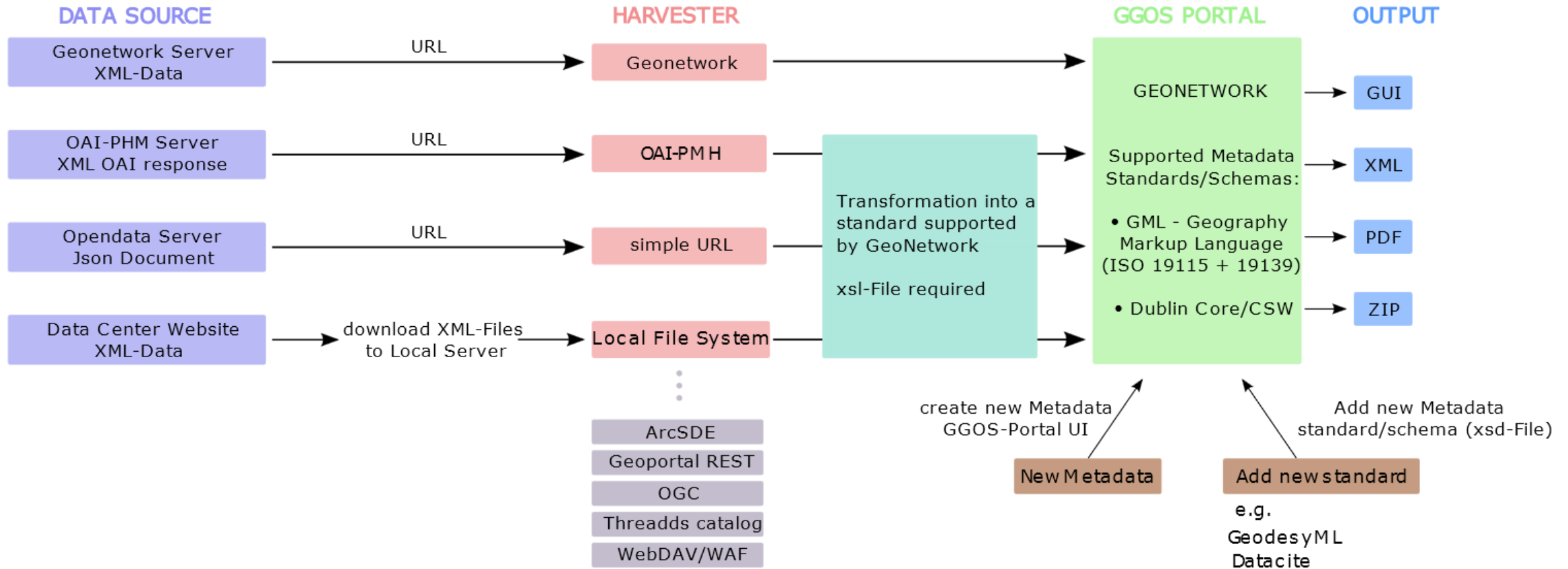
Desireable standards
for GeoNetwork

e.g.
GeodesyML
Datacite

Harvesting Methods



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Active filters

[Organizations](#) [International Service for the Geoid \(ISG\)](#)

User searches

Filter

Type of resources

Dataset (62)

Available in

Download service

View service

Keywords

EARTH SCIENCE > SOLID EARTH > GEODETICS > GEOID CHAR... (62)

EARTH SCIENCE > SOLID EARTH > GRAVITY/GRAVITATIONAL FL... (62)

Geodesy (62)

Geoid model (62)

ISG (62)

Colorado experiment (28)

Fast Fourier Transform (20)

Wong-Gore Stokes kernel modification (11)

Least Squares modification of Stokes integral with additive corrections (8)

São Paulo State (6)

[more](#)

Years

2000-2005 (2)


Organizations

International Service for the Geoid (ISG) (62)

Centro de Estudos de Geodesia (CENEGEO), São Paulo, Brazil (4)

« < 1 - 30 on 62 > »


The Argentinian gravimetric geoid: GEOIDE-Ar16



The GEOIDE-Ar16 Argentinian gravimetric geoid model covers the area from 57° S to 20° S in latitude and from 76° W to 52° W in longitude, with a grid resolution of 1' × 1'. It was developed using the remove-compute-restore technique and incorporating the GOCO05S satellite-only global geopotential model up to degree and order 280, ...

National Geographic Institute, Buenos Aires, Argentina


The Austrian hybrid geoid in the ETRS89 system: Austrian Geoid 2008 (GRS80)



The Austrian Geoid 2008 is the official geoid model for Austria provided by the Austrian Federal Office for Metrology and Surveying (BEV). This model describes the transformation surface (EPSG:9276) between ellipsoidal heights w.r.t. the GRS80 ellipsoid (EPSG:4937) and orthometric heights (EVRF2000 Austrian, EPSG:9274). The grid is ...

Department Control Survey, Federal Office of Metrology and Surveying (BEV), Vienna, Austria


The gravimetric geoid of Costa Rica: GCR-RSH-2020



The geoid for Costa Rica GCR-RSH-2020 (Geoide-Costarricense-Regional Calculado con el Método de Stokes-Helmert) is a 1 arc minute grid computed from terrestrial, marine and satellite gravity data. It is remarkable the comprehensive data cleaning and the use of new terrestrial gravity values which were not included in any other geoid.

School of Surveying Engineering, University of Costa Rica, Costa Rica

The Slovenian hybrid quasi-geoid: SLO-VRP2016/Koper



The SLO-VRP2016/Koper quasi-geoid model is the latest height reference surface for Slovenia, referred to the GRS80 ellipsoid. The acronym means SLOvenska Višinska Referenčna Ploskev iz leta 2016, datum Koper (translated in English, Slovenian Height Reference Surface from the year 2016, datum Koper). It was computed by the ...

Surveying and Mapping Authority, Ljubljana, Republic of Slovenia





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The Austrian hybrid geoid in the ETRS89 system: Austrian Geoid 2008 (GRS80)

The Austrian Geoid 2008 is the official geoid model for Austria provided by the Austrian Federal Office for Metrology and Surveying (BEV). This model describes the transformation surface (EPSG:9276) between ellipsoidal heights w.r.t. the GRS80 ellipsoid (EPSG:4937) and orthometric heights (EVRF2000 Austrian, EPSG:9274). The grid is defined in ETRS89 (EPSG:4258), covering the area within $46.3^\circ < \text{latitude} < 49.1^\circ$ and $9.5^\circ < \text{longitude} < 17.3^\circ$, with a spacing of 1.5' in latitude and 2.5' in longitude. The model is based on 14001 gravity anomaly values, 672 deflections of the vertical and 170 GPS/levelling observations. The computation was performed in the framework of a remove-restore procedure, modelling the long wavelengths of the gravity field by the EIGEN-GL04S global model, and the short wavelengths by the Airy-Heiskanen model with a standard density of 2670 kg/m³. A digital terrain model with a resolution of 44 x 49 m was assembled as a combination of regional Austrian and Swiss models, as well as SRTM for the neighboring countries. The Least Squares Collocation (LSC) technique was used for the geoid computation, interpolating the empirical covariance of the residual quantities by the Tscherning-Rapp analytic covariance model. Special care was devoted to the optimal relative weighting of the input data, namely to the noise covariance models, especially concerning the GPS/levelling observations. The resulting hybrid geoid model was assessed by comparing it with independent GPS/levelling information, leading to an estimated accuracy of the order of 2-3 cm over the whole Austrian territory. The model is also available at the BEV open data portal, and more information about it can be found on the BEV website.

The geoid model is provided in ISG format 2.0 (ISG Format Specifications), while the file in its original data format is available at the model ISG webpage.



Links



Data Access - DOI

Open link



Access and use constraints

CC BY 4.0

Resource constraints

CC BY 4.0

Technical information

↶ **Revision** 30-01-2023

➤ **Creation** 01-01-2008

Keywords

Austria Geodesy

Geoid model ISG

Least Squares Collocation

NASA/GCMD Earth Science Keywords

EARTH SCIENCE > SOLID EARTH > GEODETICS > GEOID CHARACTERISTICS

Resource identifier

doi:10.5880/isg.2008.001

Language

English

Categories

Geoscientific information

Coordinate reference system

urn:ogc:def:crs:EPSG:4326

Contact for the resource

Point of Contact

D

Department Control Survey, Federal Office of Metrology and Surveying (BEV), Vienna, Austria
Federal Office of Metrology and Surveying (BEV)

F

International Service for the Geoid (ISG)

I

Metadata information

Point of Contact

G


GFZ German Research Centre for Geosciences

Metadata Overview

Metadataprovider	Format	Standard	Implementation	IERS	IGS	ILRS	IVS	IDS	PSM SL	ICGEM	IDEM S	IGETS	ISG	BGI	COST-G
GFZ Data Service	XML	ISO19139	OAI-PHM Harvester							+		+	+		~
BEV	XML	ISO19139	Geonetwork Harv												
NASA Earthdata	XML	ISO19115	XML File System Harv	~	+	+	+	+							
	JSON	Echo-API	Simple URL Harvester												
Datacite - DOI	XML	Datacite	XML File System Harv		*	*	*	*		+		+	+	*	+
			OAI-PHM Harvester												
	JSON	Datacite-API	Simple URL Harv												
Station Sitelog	XML	Geodesy ML	XML File System Harv		+	+	+								
	Sitelog	z.B. IGS													
IDEM S	XML	no standard	XML File System Harv								+				
CDDIS	HTML	no standard	no Harvester		+	+	+	+							
PSM SL Website	HTML	no standard	no Harvester						+						
IERS Website	HTML	no standard	no Harvester	+											

- Implementation works
- Metadata Standard not supported (XSL and/or XSD file missing)
- No Implementation provided (HTML content cannot be harvested)
- + Large amount of geodetic data with metadata
- ~ Small amount of geodetic data with metadata
- * Little information in the metadata

Summary

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- **Software-Packages**

- GeoNetwork better established/maintained for Geo-Metadata than CKAN

- **Metadata Harvesting**

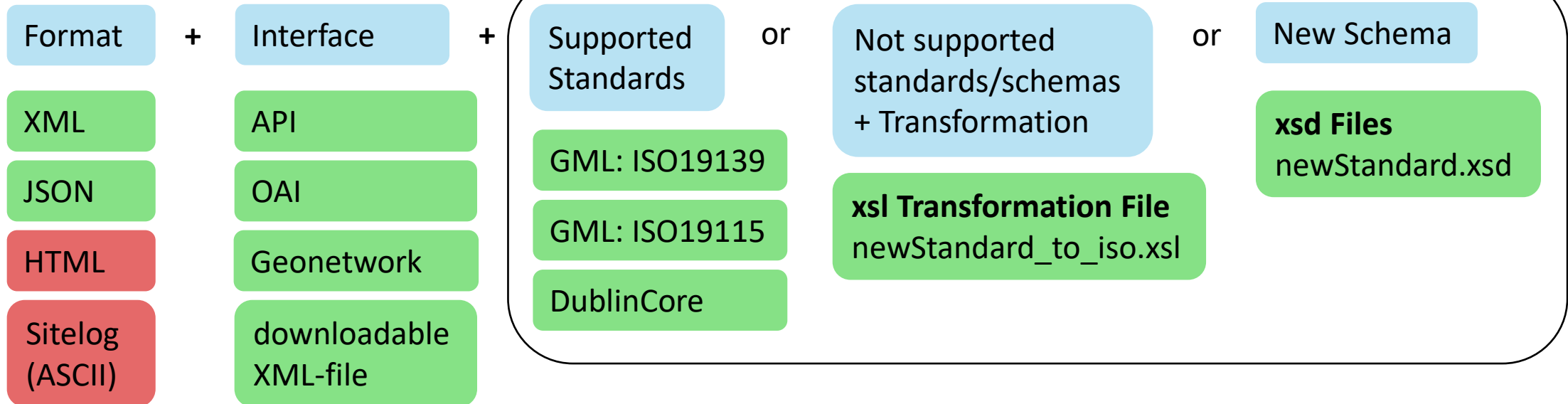
- Challenge to deal with different standards/schemas

- **Availability of Metadata within IAG:**

- Many geodetic products already have metadata information
- But a lot of them are not in needed XML format or supported metadata standard/schema




Recommendations for Data Provider


→ Own Metadata Provision (creating machine-readable metadata on your own)



→ Minting DOI for geodetic data and add metadata (XML then provided by registration agency)

→ Metadata Creation (XML) directly at GGOS Portal

-  recommended
-  Possible but not the best solution
-  Not possible to integrate

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Thank you for your attention!

More information



ggos.org/portal