

STUTTGART 2019 INTERGEO®  
17. – 19. SEPTEMBER WISSEN UND HANDELN FÜR DIE ERDE

Florian Thiery <sup>1+2+3</sup>

Mainz, Germany

<sup>1</sup> Linked Geodesy

<sup>2</sup> FV KonGeoS e.V.

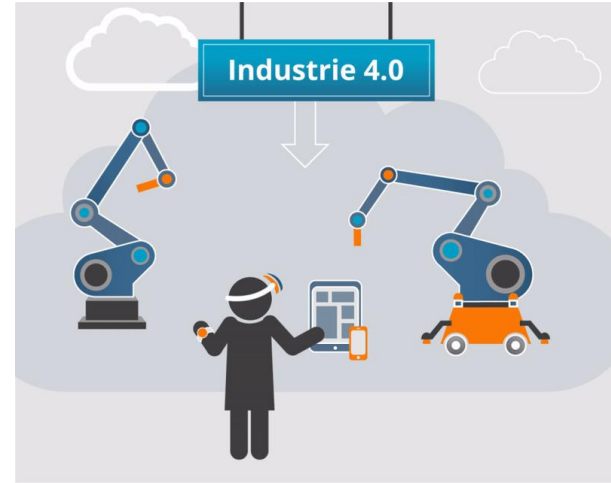
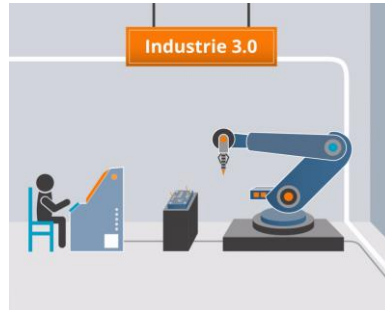
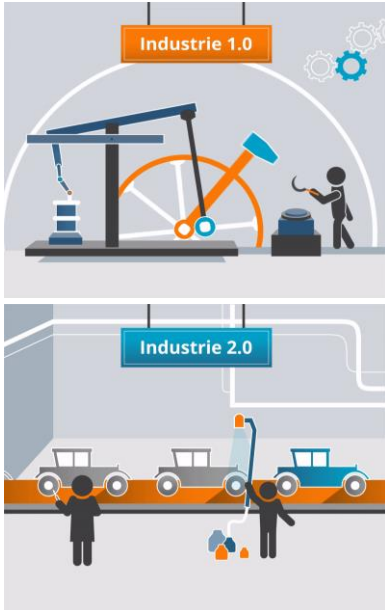
<sup>3</sup> AK1 DVW e.V.



# Linked Data Cloud

Bindeglied zwischen Geodäsie und Gesellschaft





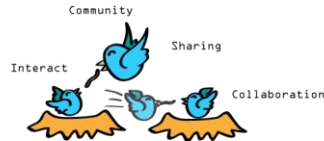
## **Wir erleben Industrie 4.0 im Arbeitsalltag** *we are experiencing Industry 4.0 in everyday work*



### WEB 1.0



### WEB 2.0



### WEB 3.0



**Das Web entwickelt sich vom Semantic Web zum Web 4.0**  
*the Web develops from the Semantic Web to Web 4.0*



**80%  
data**

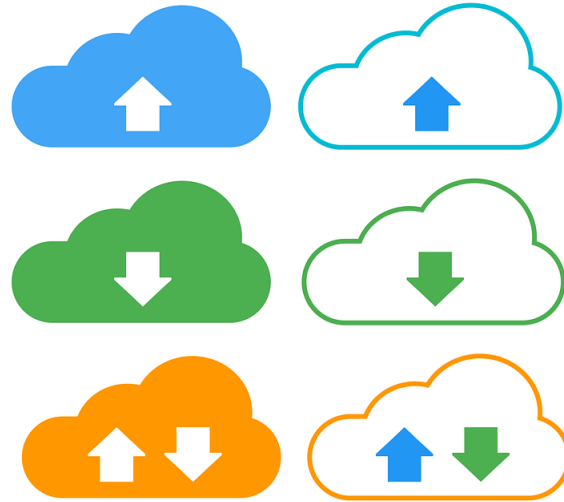


**Geodaten sind Treibstoff digitaler Gesellschaft**  
*geodata are the fuel of digital society*



- Open Data**
- Open Source Software**
- Open Access**

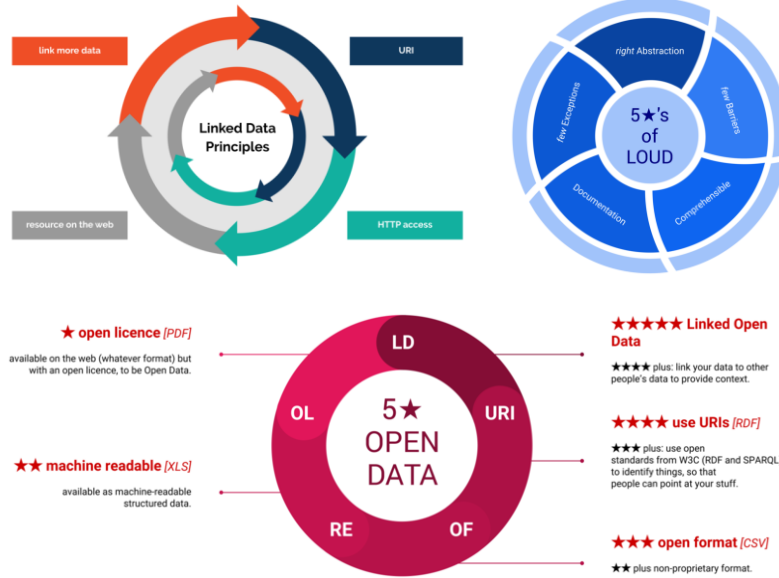
**Bestandteile des OOO-Modells werden immer wichtiger**  
*components of the OOO model are becoming increasingly important*



**Digitales Arbeiten findet in der Cloud statt**  
*digital work takes place in the cloud*



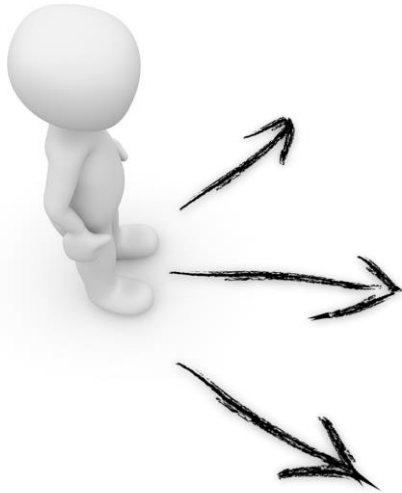
**Bereitstellung von Daten im Internet in Standards**  
*providing data on the Internet in standards*



# Daten als Linked Open Usable Data bereitstellen!

*provide data as Linked Open Usable Data!*





**Linked** (*Open*) **Data**

**Open Data**

**Open Source Software**

**Open Access**

(*Open*) **Geo Data**

**Geodaten als Linked Open Geodata bereitstellen!**

*provide geodata as Linked Open Geodata!*



# data.geohive.ie

Serving Ireland's geospatial information as Linked Data.

## About the Initiative

The goal of Ordnance Survey Ireland's (OSI) initiative with ADAPT is to develop a platform to publish OSI's geospatial data as Linked Data on the Web whilst adhering to best practices in the domain of geospatial information. The publication of Linked Data enables third parties to explore and consume rich data in a meaningful manner via a combination of simple, standardized technologies (e.g., RDF and URI) that operate over the Web's existing HTTP infrastructure.

[View details »](#)

## Download

Ordnance Survey Ireland's geospatial data is available via a Linked Data frontend (e.g., by following the HTTP URI of County Dublin) and as downloadable datasets for local use.

[View details »](#)

## Contact and Legal

Contact us:

- Corporate
- Geohive

Or send us an email via [geohive@osi.ie](mailto:geohive@osi.ie).

Legal:

- Corporate
- Privacy
- The data served by the OSI via the Linked Data frontend, query endpoints and files is licensed under CC BY 4.0.



© 2019 Ordnance Survey Ireland.

## DUBLIN at OSI Geohive

<http://data.geohive.ie/resource/county/2ae19629-144f-13a3-e055-000000000001>

Property	Value
geo:hasGeometry	• <geometrical_recreation>
rdfs:label	• Baile Átha Cliath (ga) • DUBLIN (en) • DUBLIN
geohive:loganmid	• <https://www.loganm.ie/ga/100002>
owl:similarTo	• <http://dbpedia.org/resource/County_Dublin>
rdf:type	• geohive:County • geo:Feature

[As Turtle](#) | [As RDF/XML](#)



© 2019 [Ordnance Survey Ireland](#) Linked Data Frontend powered by [Pubby](#).

DUBLIN >>> geo:hasGeometry

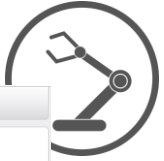


GeoHive

Property	Value
geo:hasGeometry	• <http://data.geohive.ie/resource/county/2ae19629-144f-13a3-e055-000000000001>

# LOD im Ordnance Survey Irland

## LOD at Ordnance Survey Ireland



Ordnance Survey

You are here: [linked-data](#) > [ordnance-survey-linked-data](#)

## Ordnance Survey Linked Data

The Ordnance Survey is Great Britain's national mapping agency, providing the most accurate and up-to-date geographic data, relied on by government, business and individuals.

OS OpenData is the opening up of Ordnance Survey data as part of the drive to increase innovation and support the "Making Public Data Public" initiative. As part of this initiative Ordnance Survey has published a number of its products as Linked Data.

This dataset combines three separate linked data resources: the 1:50 000 Scale Gazetteer, Code-Point Open and the administrative geography gazetteer for Great Britain.

[Read more about this dataset](#)

### Explore this dataset

Find things by keyword powered by SEARCH

Enter a keyword... [Examples](#)

[Find](#) [Reset](#)

Find things using a query powered by SPARQL

Lookup an identifier powered by LOOKUP

Turn labels into identifiers powered by RECONCILIATION

### Dataset Summary

**OS OpenData**

License:	OS Open Data License
Created:	October 25th, 2010
Updated:	August 30th, 2018
Size:	60,136,519 triples
Coverage:	England, Scotland, Wales
Ontologies:	Postcode Ontology The administrative geography and civil voting area ontology Geometry Ontology Spatial Relations Ontology 50k Gazetteer

Export the dataset metadata as JSON, XML, or Turtle or download the raw data

Ordnance Survey © Crown copyright 2018 [Contact us](#)

Ordnance Survey

You are here: [linked-data](#) > [ordnance-survey-linked-data](#) > [edinburgh](#)

## Edinburgh

Map powered by OS OpenSpaces

Zoom to: [Country](#) [County](#) [District](#) [City Area](#) [City](#) [Street](#)

© Crown copyright and database rights 2018 Ordnance Survey

Edinburgh is a Named Place

### Objects related to "Edinburgh"

TwentyKMGrid Reference	NT26
Feature Type	City
OneKMGrid Reference	NT2773
Map Reference	66
referenced via Primary Topic by	Description of <a href="http://data.ordnancesurvey.co.uk/id/50kGazetteer/81103">http://data.ordnancesurvey.co.uk/id/50kGazetteer/81103</a>

### Core facts about "Edinburgh"

Type	Named Place
Label	Edinburgh
Name	Edinburgh
Northing	673600
Easting	327500

Use this data in your app! Explore the underlying dataset and APIs or export the information about Edinburgh as JSON, XML, or Turtle.

Find Edinburgh products in the OS Online Shop

Find maps, clothing, GPS, and more

# LOD im Ordnance Survey Großbritannien

## LOD at Ordnance Survey United Kingdom



LinkedGeoData.org

Adding a spatial dimension to the Web of Data.

Project created by:



About / News  
Downloads  
Online Access  
RDF Mapping  
Use Cases  
LGD Browser  
Publications  
Community  
Blog  
Contact / Imprint

2018 May 7: **Linked Data interface operation back to normal**  
Quick Links: Downloads – SPARQL – Virtual-SPARQL by Sparqlify – HTML interface – Example Queries

LinkedGeoData is an effort to add a spatial dimension to the Web of Data / Semantic Web. LinkedGeoData uses the information collected by the OpenStreetMap project and makes it available as an RDF knowledge base according to the Linked Data principles. It interlinks this data with other knowledge bases in the Linking Open Data initiative.



#### News

LinkedGeoData: New RDF versions of OpenStreetMap datasets available

The AKSW research group is happy to announce that a new LinkedGeoData maintenance release with more than 1.2 billion triples based on the OpenStreetMap planet file from 2015-11-02 is now online. Enjoy! Quick Links Project Website Downloads SPARQL Endpoint Virtual... [Continue reading](#) --

AKSW at #ISWC2014: Come and join, talk and discuss with us!

Hello AKSW Followers! We are very pleased to announce that nine of our papers were accepted for presentation at ISWC 2014. In the main track of the conference we will present the following papers: AGDISTIS – Graph-Based Disambiguation of Named... [Continue reading](#) --

AKSW at TU Dresden PLT

On June 8, I (Jens) visited the process control engineering research group (PLT) of Leon Urbas at the Dresden University of Technology. We first met on the Leipzig Semantic Web Day where Leon Urbas presented interactive Linked Data applications and... [Continue reading](#) --

### The LinkedGeoData Knowledge Base

In order to employ the Web as a medium for data and information integration, comprehensive datasets and vocabularies are required as they enable the disambiguation and alignment of other data and information. Many real-life information integration and aggregation tasks are impossible without comprehensive background knowledge related to spatial features of the ways, structures and landscapes surrounding us.

LinkedGeoData uses the comprehensive [OpenStreetMap](#) spatial data collection to create a large spatial knowledge base. It consists of more than 3 billion nodes and 300 million ways and the resulting RDF data comprises approximately 20 billion triples. The data is available according to the Linked Data principles and interlinked with DBpedia and Geo Names.

# Community driven LOD via LinkedGeodata.org (OSM)

*community driven LOD via LinkedGeodata.org (OSM)*

image <http://linkedgeodata.org/About>



**Wikidata** | **Stuttgart** (Q1022)

Landeshauptstadt von Baden-Württemberg, Deutschland

Sprache	Bezeichnung	Beschreibung	Auch bekannt als
Deutsch	Stuttgart	Landeshauptstadt von Baden-Württemberg, Deutschland	Stutgart
Englisch	Stuttgart	capital city of German federated state Baden-Württemberg	
Polnisch	Stuttgart	miasto niemieckie, stolica kraju związkowego Badenii-Wirtembergia	
Französisch	Stuttgart	ville d'Allemagne	

**Aussagen**

<b>ist ein(e)</b>	<b>Großstadt</b>	Startzeitpunkt: 1875
		+ 0 Fundstellen
	<b>Landeshauptstadt</b>	
	<b>von Baden-Württemberg</b>	Starzeitpunkt: 25. April 1952
		+ 0 Fundstellen

**Wikipedia** (135 Ereignisse)

- af Stuttgart
- als Stuttgart
- am Stuttgock
- an Stuttgart
- ar شتوتگارت
- ast Stuttgart
- ay Stuttgart
- az شتوتگارت
- az Штутгарт
- bar Stuggart
- be Штутгарт
- bg Штутгарт
- bn শতুগার্ট
- br Stuttgart
- bs Stuttgart
- ca Stuttgart
- ceb Stuttgart (kapital sa estado pederal)
- ce Штутгарт
- ckk شتوتگارت
- co Stuccarda
- cs Stuttgart
- cy Stuttgart
- da Stuttgart
- de Stuttgart
- dz Stuttgart
- el Ζουρυγδόνη

**Identifikatoren**

- Amtlicher Gemeindefschlüssel** | 06111000 | bearbeiten
- + eine Fundstelle
- + Wert hinzufügen

- OpenStreetMap-Relations-ID** | 2793104 | bearbeiten
- + 0 Fundstellen
- + Fundstelle hinzufügen
- + Wert hinzufügen

- GND-Kennung** | 4058282-6 | bearbeiten
- + eine Fundstelle
- + Wert hinzufügen

**Wikidata** | **Florian Thierly** (Q66606154)

Deutscher Geodät, Research Software Engineer und Wissenschaftler

Wikipedia	0 Ereignisse	bearbeiten
Wikisource	0 Ereignisse	bearbeiten
Wikidata	0 Ereignisse	bearbeiten
Wikispezial	0 Ereignisse	bearbeiten
Wikisource	0 Ereignisse	bearbeiten
Wikiversity	0 Ereignisse	bearbeiten
Wikivoyage	0 Ereignisse	bearbeiten
Wiktionary	0 Ereignisse	bearbeiten
Anderer Wikibot	0 Ereignisse	bearbeiten

**Aussagen**

- ist ein(e)** Mensch
- + 0 Fundstellen
- + Fundstelle hinzufügen
- + Wert hinzufügen

**SN**

- de**

# Community driven LOD via Wikidata

*community driven LOD via Wikidata*



Semantic  
GIS

**SemanticGIS**

Semantische Modellierung Geodateninfrastruktur

**Eckdaten**

Z Zeitraum: 01.06.2015 - 31.05.2019

**Detaillierte Personen:**

- Prof. Dr.-Ing. Frank Bocksch
- Dr. Ashish Kamatharya
- Timo Homburg, M. Sc.
- Claire Prud'homme, M. Sc.
- Dr.-Ing. Falk Wornhausen

**Kooperation:**

- geomer GmbH
- Geocomm Informations GmbH
- Universität Koblenz-Landau, W&IT
- Université Bourgogne Franche Comté (UBFC), Laboratoire LE2I - UMR CNRS 6306
- Bundesministerium für Bildung und Forschung (BMBWF)

**Motivation und Ziele:**

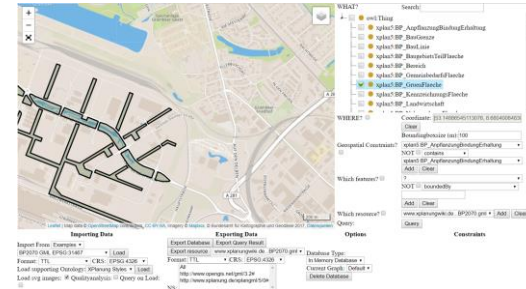
The SemGIS project aims at interpreting heterogeneous data by creating interoperability via a semantic layer between former unrelated spatial and non-spatial data sets. Applications of this semantic layer are to be found in disaster management, emergency management and decentralized green energy.

**Förderkennzeichen:** 03FH32024

The ontologies are as follows:

- XPlanung Version 2,3,4,5 Ontology
- INSPIRE Version 4 Ontology
- AAA-Data Version 6 Ontology
- XErleben Version 2 Ontology
- XKatastrophenhilfe Version 1.1 Ontology
- Interlinks between AAA-Data and [LinkedGeodata/Wikidata](#)
- Interlinks between INSPIRE Planned Landuse and XPlanung Version 4

All ontologies can be considered work in progress and will be updated as the project progresses.



# Semantic GIS Ontologien in der Forschung am i3mainz

*semantic GIS ontologies in research at i3mainz*



**Raumbezug zur Einbindung anderer Disziplinen (Digital Humanities)**  
*Spatial reference as integration of other disciplines (Digital Humanities)*



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**PLEIADES** Home Browse Places Download Data Blog Credits Documentation Vocab

You are here: Home > Ancient Places > Mogontiacum

### Mogontiacum

Oswald, C. [Integrate](#) & [Annotate](#)  
Coordinates: (54.933, 8.746) [View](#) [Download](#) [Share](#) [Share](#) [Add](#) [Share](#) [Share](#) [Share](#)  
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Last modified: Aug. 29, 2015 09:21:00 (UTC)

**Big data access:** [data-export-1](#), [data-export-2](#), [data-export-3](#)

The original Roman settlement at Mogontiacum (modern Mainz) was established by Drusus ca. 15-12 BC. The settlement became an important military center throughout Roman times and was the base of operations for numerous Roman legions.

**Canonical URI for this page:**  
<https://pleiades.stoa.org/places/109169>

**Representative Place:** [Lugdunum, Lugdunum](#)  
ID: 107375. © 2015 STCN

**Locations:**

- Site of the legary base (2E BC - AD 542)
- Site of the harbor (2E BC - AD 542)

**Names:**

- Astur (modern)
- Mogontiacum (2E BC - AD 542)

**Mogontiacum makes connections with:**

- Mogontiacum — connection — Germania Superior (modern-day range)

**Mogontiacum makes connections from:**

- Severus of the 4th and Major Major — connection —
- Mogontiacum (modern-day range) — connection —
- Unruwan Roman bridge at Mainz — connection —
- Mogontiacum (modern-day range) — connection —
- Roman Excavation of Mogontiacum — is — Mogontiacum (modern-day range)

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**Pelagios** commons  
Linking the places of our past

About Link Data Explore Data Pelagios Commons Community Activity

Pelagios Commons provides online resources and a community forum for using open data methods to link and explore historical places.

How can Pelagios Commons help me?

# Historische Orte und Anwendungen in den Digital Humanities

## *ancient places and applications in the Digital Humanities*

images <https://pleiades.stoa.org/> <https://pleiades.stoa.org/places/109169> <http://commons.pelagios.org/>

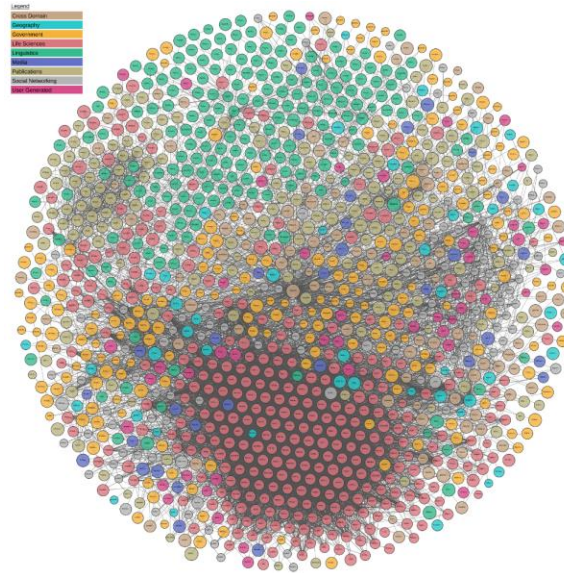




# Linked Open Geodata als Anwendung in den Humanities

## *Linked Open Geodata as an application in humanities research*

images <https://recogito.pelagios.org/>



**Es entsteht eine vernetzte interdisziplinäre Linked Data Cloud!**  
*The result is an interlinked, interdisciplinary Linked Data Cloud!*

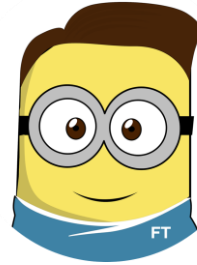


**Arbeiten 2030? Geodaten als LOD! Wissen für die Gesellschaft!**

*Work 2030? Geodata as LOD! Open knowledge for the society!*



# Thx!



Halle: 4 Stand: D4.045

## Any questions?

you can find me on twitter [@fthierygeo](#)

contact via mail [rse@fthiery.de](mailto:rse@fthiery.de)

ORCID [0000-0002-3246-3531](#)



CAA Oxford 14.-17.04.20

Linked Pasts Bordeaux 11.-13.12.19

# Related Literature



- **Linked Open Geodata in Mainz – Best Practices and Projekte im Kontext der Humanities**, DOAG Big Data Days 2018, Dresden, Germany, 21st September 2018. DOI: [10.5281/zenodo.1421690](https://doi.org/10.5281/zenodo.1421690).
- **Zweifeln erlaubt! Modellierung von Vagheit im Graphen am Beispiel des KonGeoS-Netzwerks**, 13. Konferenz der GeodäsieStudierenden, Munich, Germany, 30th November 2018. DOI: [10.5281/zenodo.1494175](https://doi.org/10.5281/zenodo.1494175).
- **topi.link - A graph-based topology for vague geographical relations**, 32. International Geodetic Students Meeting, Warsaw, Poland, 25th June 2019. DOI: [10.5281/zenodo.3252392](https://doi.org/10.5281/zenodo.3252392).
- **Linked Open Data in Space and Time - A geodetic insight into humanities research using LOD**, XXIX. International Geodetic Students Meeting, Munich, Germany, 04th May 2016. DOI: [10.5281/zenodo.292962](https://doi.org/10.5281/zenodo.292962).

# Related Literature



- **Semantic Web und Linked Data: Generierung von Interoperabilität in archäologischen Fachdaten am Beispiel römischer Töpferstempel**, Masterthesis, stand number KM042, Supervisor: Prof. Kai-Christian Bruhn, in cooperation with i3mainz - Institute for Spatial Information and Surveying Technology and Römisch-Germanisches Zentralmuseum (RGZM), Fachhochschule Mainz, 13rd June -11st December 2013. DOI: 10.5281/zenodo.292979.
- Florian Thiery. (2019). **Sphere 7 Data: LOUD and FAIR Data for the Research Community**, In F. Thiery Ed. *Linked Geodesy Working Papers*. 10.5281/zenodo.2643727. Mainz, Germany. DOI: 10.5281/zenodo.2643469.
- Florian Thiery. (2019). *topi.link: The Northern and Southern Ontology*, In F. Thiery Ed. *Linked Geodesy Working Papers*. 10.5281/zenodo.2643727. Mainz, Germany. DOI: 10.5281/zenodo.2635490.
- Florian Thiery, Martina Trognitz, Ethan Gruber, David-Wigg-Wolf. (2019). **Hic sunt dracones! the modern unknown Data Dragons**, In F. Thiery Ed. *Linked Geodesy Working Papers*. 10.5281/zenodo.2643727. Mainz, Germany. DOI: 10.5281/zenodo.3345711.



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