

Francesco Beretta

CNRS UMR5190 LARHRA - Université de Lyon

*Semantic Data for Humanities
and Social Sciences (SDHSS) :*

un éco-système d'ontologies
pour des données de la recherche
interopérables et réutilisables
dans le contexte des *Linked Open Data* (LOD)

Humanités Numériques & IA 2024
Bibliothèque Nationale de France, 3 mai 2024

1. Le défi

2. La méthode

3. L'implémentation

1. Le défi

Créer un graphe géant d'information
(knowledge graph)

publiant un large volume de données de la recherche
en sciences humaines et sociales

reliées aux données des institutions patrimoniales
(bibliothèques, archives, musées)

et celles des sciences participatives
(DBPedia, Wikidata, etc.)

Deutsche Forschungsgemeinschaft
(German Research Foundation)

The Digital Turn in the Sciences and Humanities

White Paper 2020

<https://doi.org/10.5281/zenodo.4191345>

- emergence of *new, digital research practices* which need to be integrated, *epistemically* and otherwise, in the **context of a given discipline**.
- what is actually decisive for the expansion of knowledge-building possibilities are the associated **scaling effects** (volumes, speed, complexity)

The effects of the digital turn on the sciences and humanities can be divided into three categories:

- **Transformative change** concerns the transfer of analogue information and practices to a digital form
- **Enabling change** is the use of data-intensive technologies to *address [new] research questions* that could not be tackled in another form
- **Substitutive change**, digital technologies are used to support or even replace conceptual parts of the research process

DFG, White Paper 2020

Findable

Accessible

Interoperable

Re-usable

«There is an urgent need to *improve the infrastructure* supporting the *reuse* of scholarly data »

Wilkinson, Mark D., Michel Dumontier, Ijsbrand Jan Aalbersberg, Gabrielle Appleton, Myles Axton, Arie Baak, Niklas Blomberg, et al. “*The FAIR Guiding Principles for Scientific Data Management and Stewardship.*” *Scientific Data* 3 (March 15, 2016): 160018.

The FAIR Data Principles

To be **Interoperable**:

- I1. (meta)data use a *formal, accessible, shared, and broadly applicable language for **knowledge representation***.
- I2. (meta)data use *vocabularies that follow FAIR principles*.
- I3. (meta)data include qualified references to other (meta)data.

To be **Re-usable**:

- R1. meta(data) have a plurality of accurate and relevant attributes.
 - R1.1. (meta)data are released with a *clear and accessible data usage license*.
 - R1.2. (meta)data are associated with their *provenance*.
 - R1.3. (meta)data meet **domain-relevant community standards**.

Linked Open Data and the Semantic Web



Tim Berners-Lee, the inventor of the Web and Linked Data initiator, suggested a 5-star deployment scheme for Open Data.

<https://5stardata.info/en/>

Linked Open Data and the Semantic Web

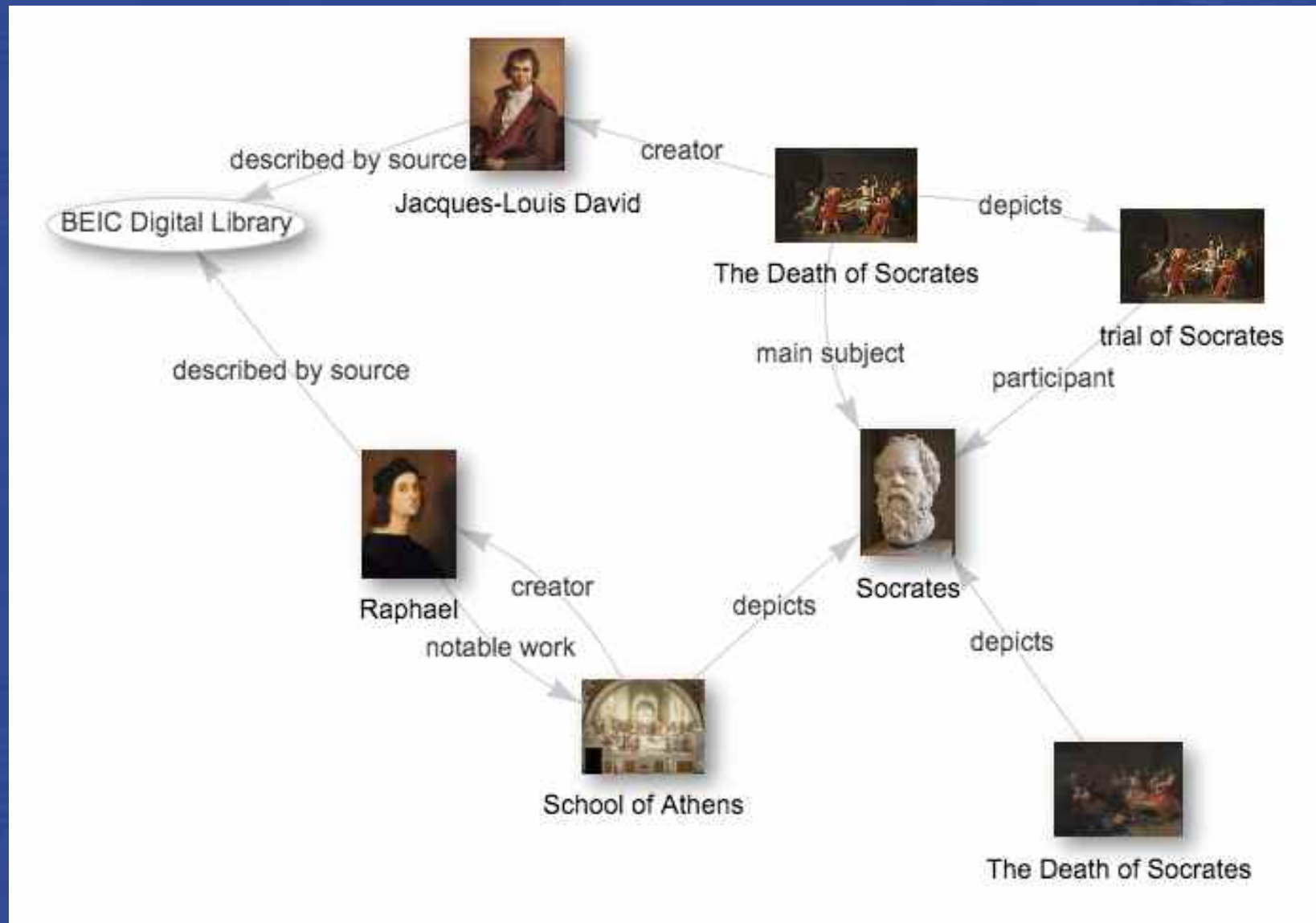
(<https://www.w3.org/TR/rdf11-concepts/>)

- « The Resource Description Framework (**RDF**) is a framework for **representing information in the Web.** »
- « A graph-based data model »



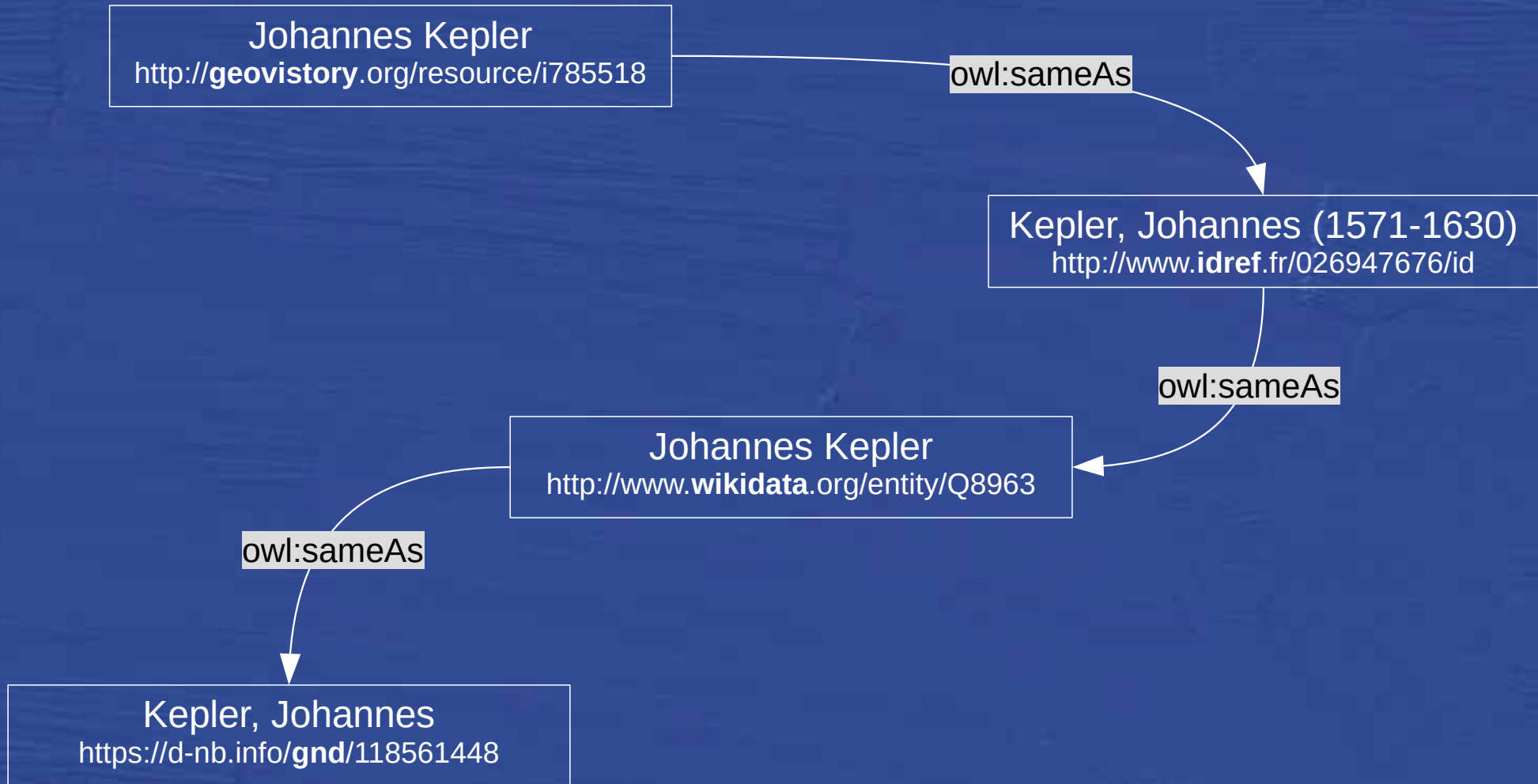
RDF triple

Wikidata : un graphe d'information (*knowledge graph*) qui représente les objets du monde et leur relations

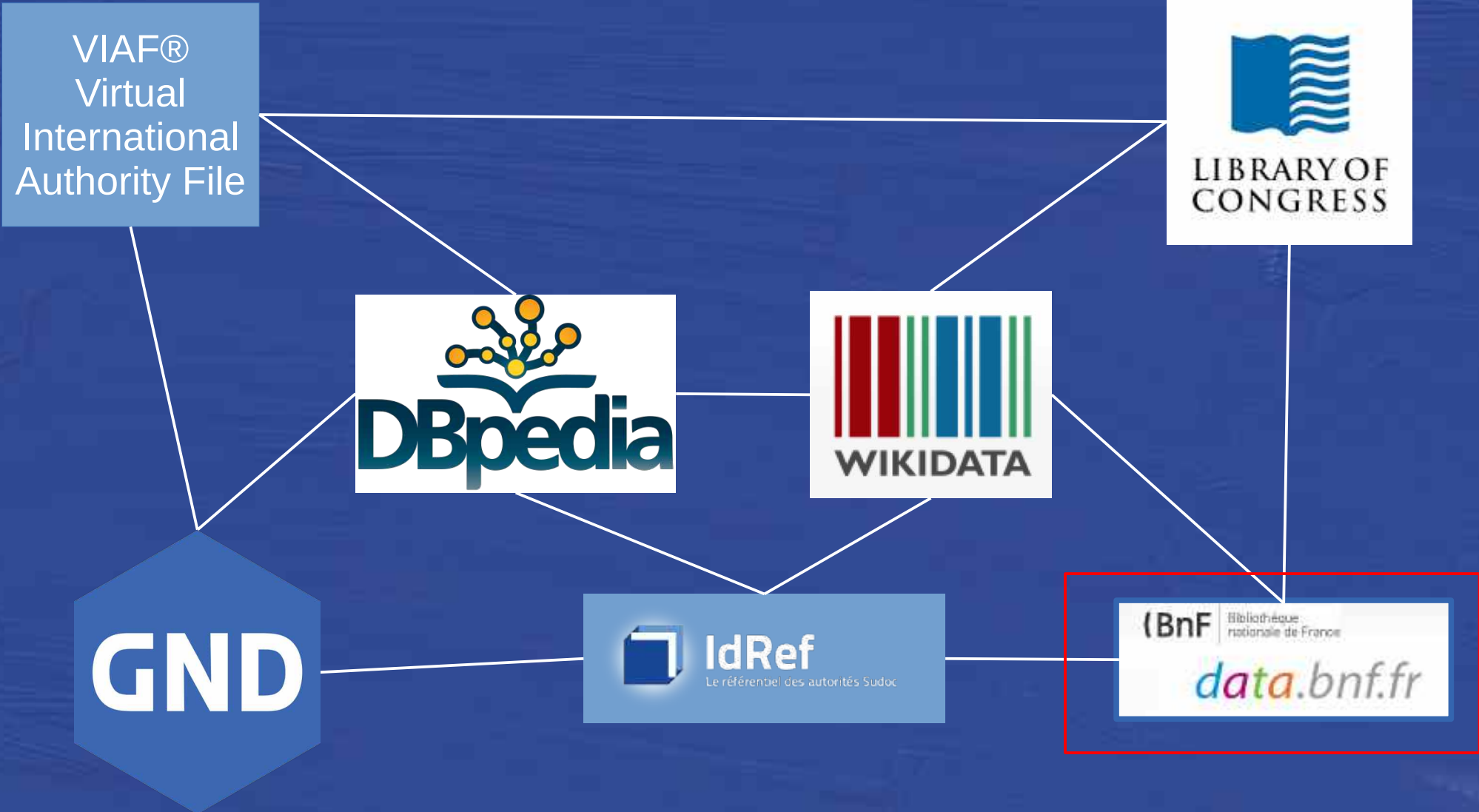


LOD fondés sur les liens

« URIs to denote things, so that people can point at your stuff »



Interconnecter les ressources pour fonder le graphe d'information





data.bnf.fr

4 langues

Sommaire masquer

Article Discussion

Lire Modifier Modifier le code Voir l'historique Outils

Début

Description

Notes et références

Bibliographie complémentaire

Liens externes



Cet article est une **ébauche** concernant les **sciences de l'information et des bibliothèques** et le **Web sémantique**.

Vous pouvez partager vos connaissances en l'améliorant (**comment ?**) selon les recommandations des **projets correspondants**.

data.bnf.fr est une base de données sémantique contenant des données sur les œuvres, les auteurs et les thèmes du catalogue de la **Bibliothèque nationale de France** (BNF).

Description [modifier | modifier le code]

Ce service s'inscrit dans le paysage du **Linked Open Data** et offre un accès aux données, soit par négociation de contenu, avec notamment une version **HTML** pour les lecteurs humains et des versions en paquets de données sous divers formats (**RDF/XML**, **RDF/nt**, **RDF/n3**) pour les programmes informatiques, soit en effectuant des requêtes sur le jeu de données en utilisant le langage **SPARQL**^[1]. Il a été mis en ligne en juillet 2011.

Notes et références [modifier | modifier le code]

- ↑ Endpoint SPARQL de data.bnf.fr [archive]

Bibliographie complémentaire [modifier | modifier le code]

Autorités BnF

{ BnF

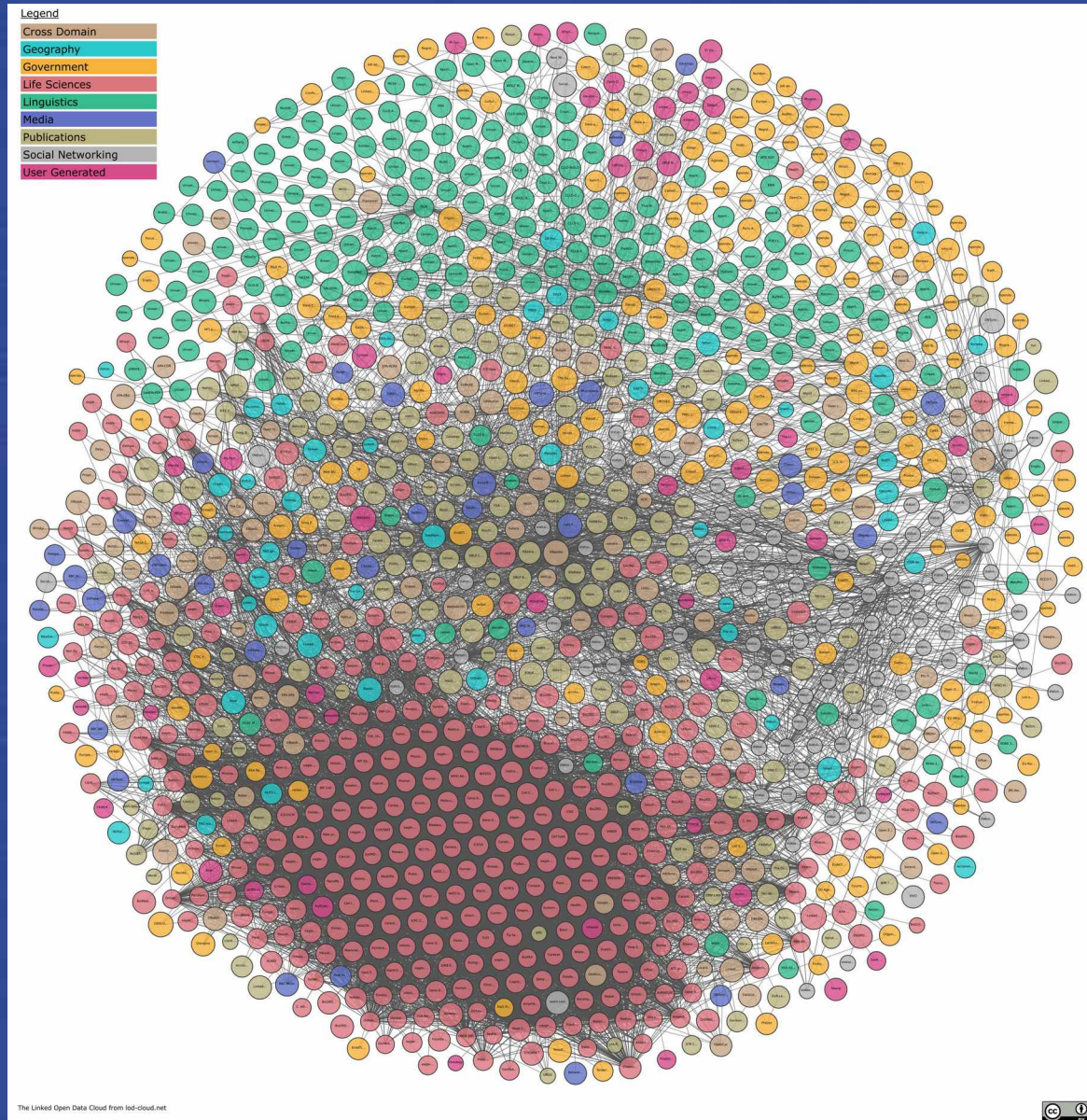
Typologie

Sigle	BNF
Pays	France
Date de création	Juillet 2011
Partie de	Web sémantique

Diffusion

Langue	Français
Licence	Licence ouverte
Site web	data.bnf.fr

Web sémantique

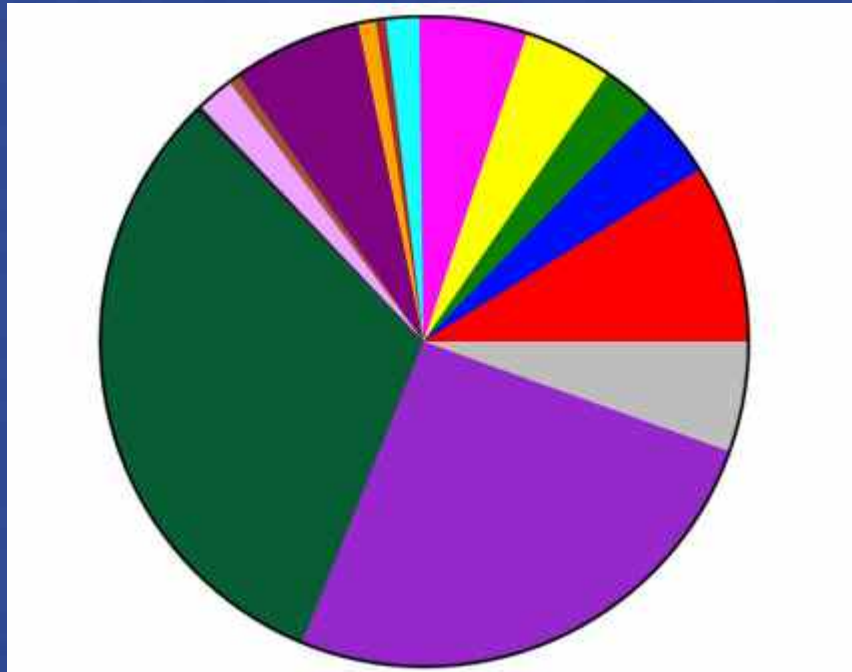


<https://lod-cloud.net/>

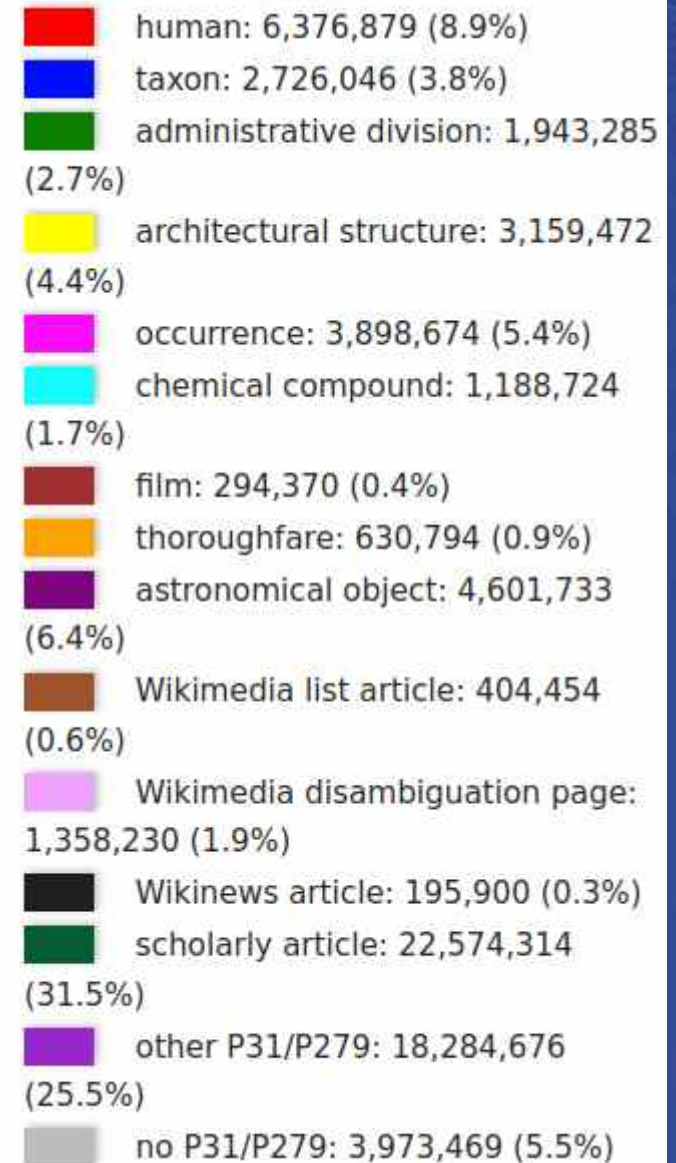
Wikidata

14 November 2023 – 107'588'216 items

1.5 billions statements



16 February 2020 : 71,611,020 items



Google Knowledge Graph

“By March 2023, it had grown to 800 billion facts on 8 billion entities”
(Wikipedia).

The screenshot shows a Google search for "Sophia Báthory". The search results include a Knowledge Graph panel on the right, which is highlighted with a red border. The panel contains the following information:

- Info**
- Sophia Báthory de Somlyó war die Ehefrau von Georg II. Rákóczi, dem Fürsten von Siebenbürgen. [Wikipedia](#)
- Geboren:** 1629, Schomlenmarkt, Rumänien
- Verstorben:** 14. Juni 1680, Mukatschewe, Ukraine
- Ehepartner:** [Georg II. Rákóczi](#) (verh. 1643–1660)
- Enkelkind:** [Franz II. Rákóczi](#)
- Großelternanteil:** [Stephen Báthory](#)
- Urenkelkinder:** [Graf von Saint Germain](#), [József Rákóczi](#), [Leopold György Rákóczi](#), [Leopold Rákóczi](#), [György Rákóczi](#)
- Urgroßelternanteil:** [Andrew Báthory](#)

Wikidata et le Google Knowledge Graph

Item **Discussion**

Zsófia Báthory (Q250942)

Princess Consort of Transylvania (1629–1680) edit
 Zsófia Bathory

In more languages

Configure


Language	Label	Description	Also known as
English	Zsófia Báthory	Princess Consort of Transylvania (1629–1680)	Zsófia Bathory
German	Zsófia Báthory	Ehefrau von Georg II. Rákóczi, des Fürsten von Siebenbürgen (1629–1680)	
Alemannic	No label defined	No description defined	
French	Zsófia Báthory	(1629–1680)	

All entered languages

Statements

Instance of human 1 reference

Image



Báthory Zsófia 1629.jpg
 585 × 779; 155 KB

Google Knowledge Graph ID edit /g/121258kx

0 references

+ add reference

+ add value

Hungarian National Namespace person ID (new) edit 662639

0 references

+ add reference

+ add value

Property **Discussion**

Google Knowledge Graph ID (P2671)

identifier for Google Knowledge Graph API, starting with "/g/". For IDs starting with "/m/", use Freebase ID (P646)

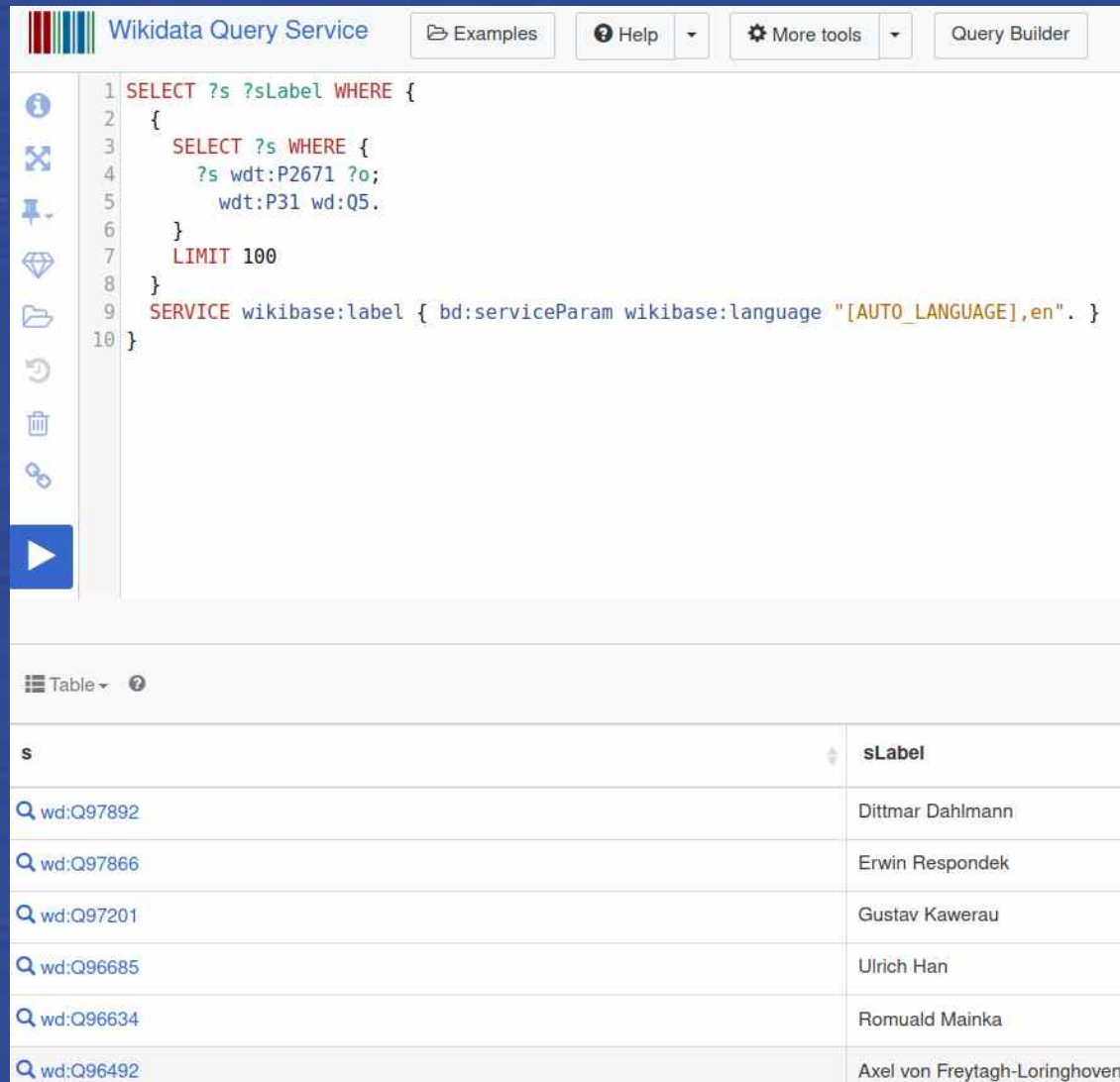
In more languages

Configure

Language	Label	Description	Also known as
English	Google Knowledge Graph ID	identifier for Google Knowledge Graph API, starting with "/g/". For IDs starting with "/m/", use Freebase ID (P646)	

SPARQL

un langage permettant d'interroger et croiser (fédérer)
les graphes d'information



The screenshot shows the Wikidata Query Service interface. At the top, there is a header with the Wikidata logo, the text "Wikidata Query Service", and several utility buttons: "Examples", "Help", "More tools", and "Query Builder". Below the header is a text area containing a SPARQL query. The query is as follows:

```
1 SELECT ?s ?sLabel WHERE {
2   {
3     SELECT ?s WHERE {
4       ?s wdt:P2671 ?o;
5       wdt:P31 wd:Q5.
6     }
7     LIMIT 100
8   }
9   SERVICE wikibase:label { bd:serviceParam wikibase:language "[AUTO_LANGUAGE],en". }
10 }
```

Below the query editor, there is a "Table" view showing the results of the query. The table has two columns: "s" and "sLabel". The results are as follows:

s	sLabel
wd:Q97892	Dittmar Dahlmann
wd:Q97866	Erwin Respondek
wd:Q97201	Gustav Kawerau
wd:Q96685	Ulrich Han
wd:Q96634	Romuald Mainka
wd:Q96492	Axel von Freytagh-Loringhoven

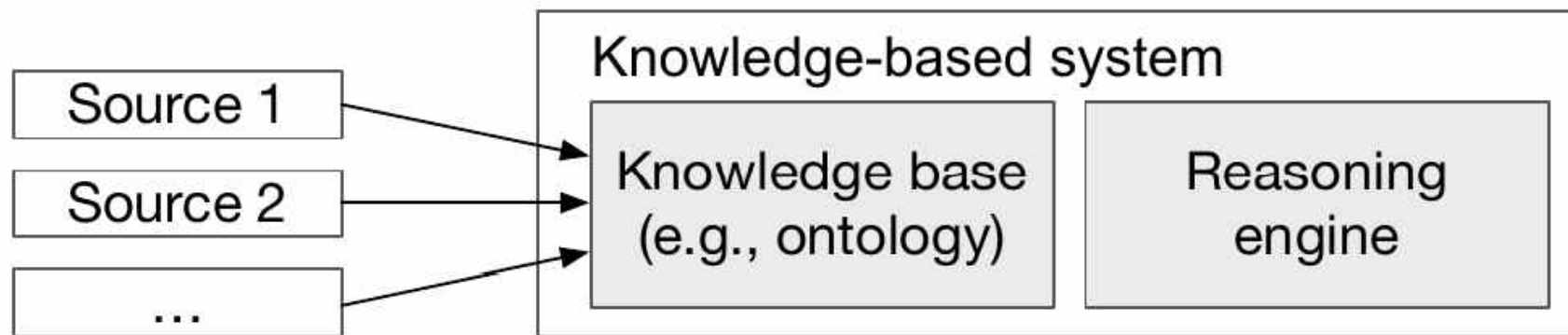


Figure 1: Architecture of a knowledge graph

Ehrlinger, Lisa and Wolfram Wöß, 'Towards a Definition of Knowledge Graphs', *Joint Proceedings of the Posters and Demos Track of the 12th International Conference on Semantic Systems ...*, Leipzig, Germany, September 12-15, 2016, 2016 (<https://ceur-ws.org/Vol-1695/paper4.pdf>)

List of Reasoners

Last updated: 19 June 2018

This page contains two lists (in alphabetical order) of [Description Logic](#) reasoners, together with a description of their capabilities and links to their web page. The first list is about reasoners which are currently being enhanced, maintained, and worked on. For readability, we first present a table with links to core publications (as confirmed by the reasoner developers) and then a more detailed list with descriptions and features.

The current version of the list was determined as part of a survey of reasoners (filled in by the developers themselves), to be presented at the OWL RE 2015. The second list is about reasoners which are previously available, yet have not been modified for a longer period of time. It is maintained by [Uli Sattler](#) and [Nico Matentzoglou](#). If you want to be added to this web page or want to update or modify one of the entries, please send us an email and fill in this survey.

RECENT ANNOUNCEMENTS

- [Free Advanced OWL Tutorial Manchester](#) March 14, 2016
- [Funded OWL & Protégé Tutorial in March 2016](#) February 7, 2016
- [Updated List of OWL reasoners](#) March 28, 2015

SEARCH

MANCHESTER LINKS

- [Bio-Health Informatics Group](#)

FaCT++

[Home](#) | [OWL API](#) | [Tools](#) | [Services](#) | [Documentation](#) | [Contact](#)

FaCT++

FaCT++ is the new generation of the well-known **FaCT** OWL-DL reasoner. FaCT++ uses the established FaCT algorithms, but with a different internal architecture. Additionally, FaCT++ is implemented using C++ in order to create a more efficient software tool, and to maximise portability. New optimisations have also been introduced, and some new features added.

Download

FaCT++ is released under a GNU public license and is available for download both as a binary file and as source code. To build FaCT++ you will need a C++ compiler (GNU gcc v3.3 and higher have been used successfully) and GNU make. In order to build a DIG version of a reasoner, the XML parsing library Xerces-C++ is also required. This is freely available at <http://xml.apache.org/xerces-c>.

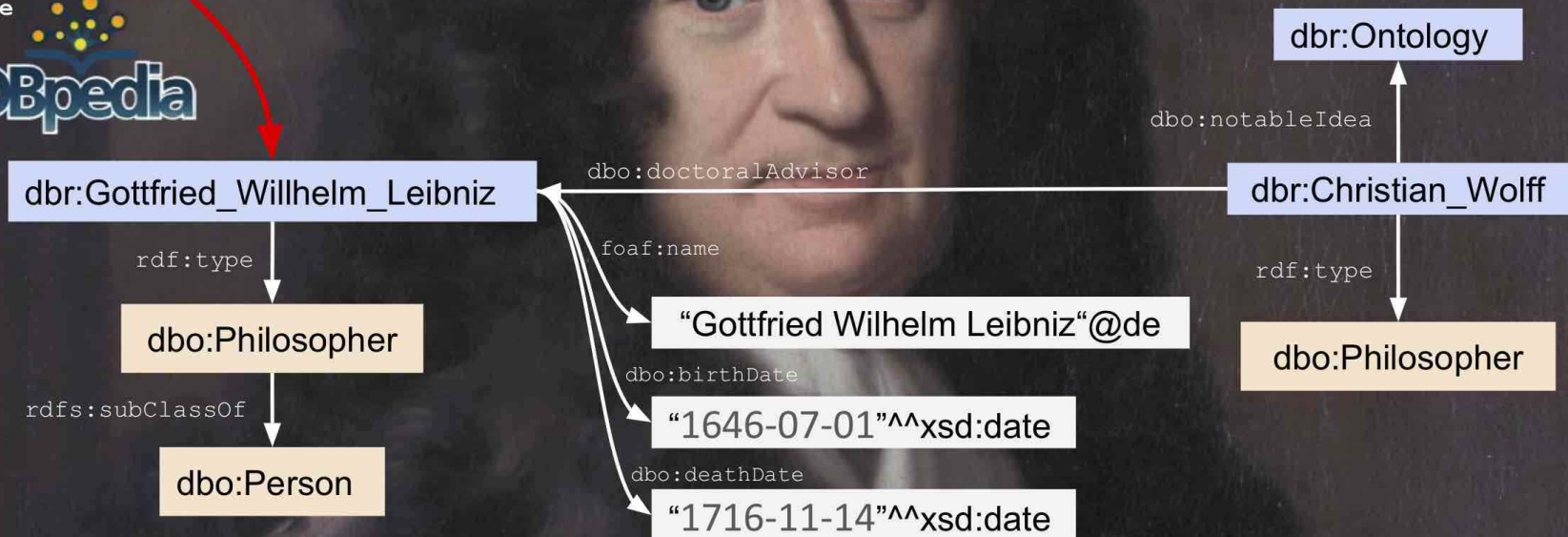
The FaCT++ source code and precompiled binaries can now be found at a Google Code: <http://code.google.com/p/factplusplus/>

Knowledge Graphs for Natural Language Processing

Leibniz wrote to Caroline of Ansbach that Newton's physics was detrimental to natural theology. However, eager to defend the Newtonian view, it was Clarke who responded and the correspondence between both continued until the death of Leibniz.

text

knowledge
base



21

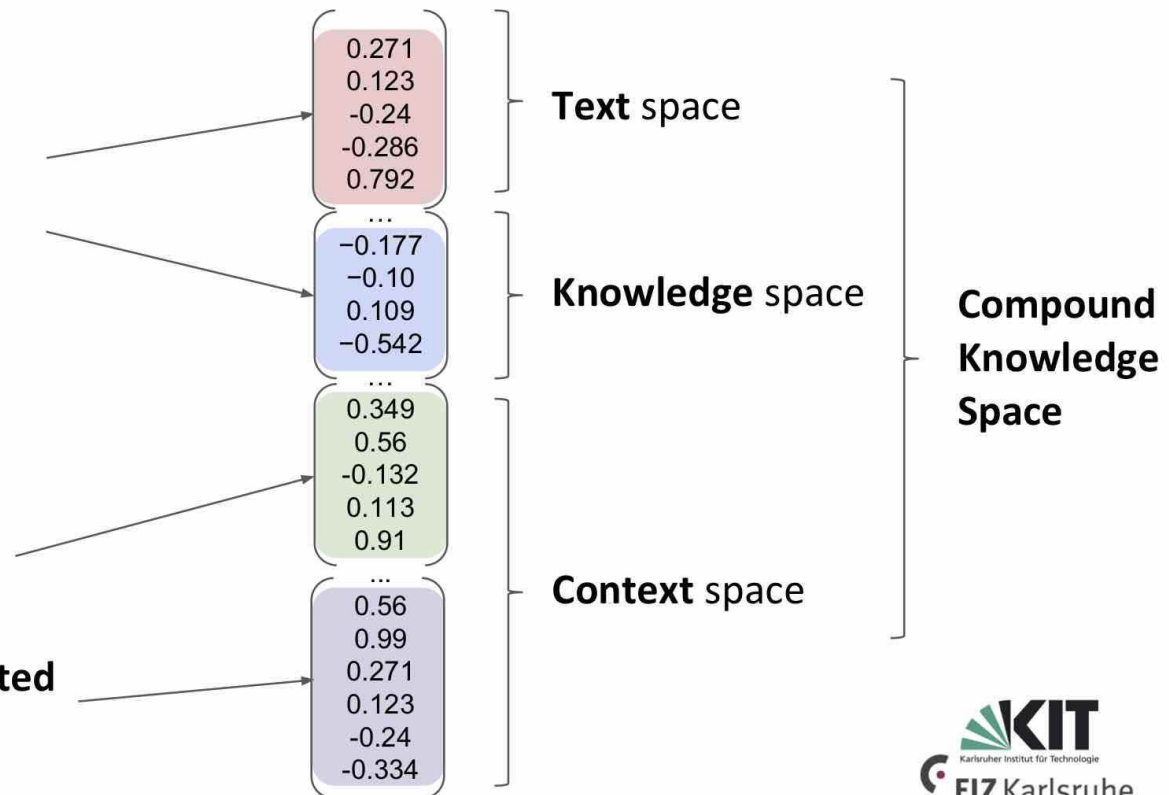
Karlsruher Institut für Technologie (29. Novembre 2017) – Antrittsvorlesung von

Prof. Dr. Harald Sack

Combining Semantics and Deep Learning for Intelligent Information Services

Combined Feature Embeddings for a **Compound Knowledge Space**

- Various feature vectors
 - **Word embeddings**
 - **Knowledge Graph embeddings**
 - Instances
 - Ontologies
 - Embeddings for **semantically enriched texts**
 - **Metadata and aggregated features**



32

Combining Semantics and Deep Learning for Intelligent Information Services, Prof. Dr. Harald Sack, AIFB Inaugural Lecture, 29.11.2017

Antrittsvorlesung von Prof. Dr. Harald Sack (29. Novembre 2017)

The effects of the digital turn on the sciences and humanities can be divided into three categories:

- **Transformative change** concerns the transfer of analogue information and practices to a digital form
- **Enabling change** is the use of data-intensive technologies to *address [new] research questions* that could not be tackled in another form
- **Substitutive change**, digital technologies are used to support or even replace conceptual parts of the research process

DFG, White Paper 2020

1. Le défi

2. La méthode

3. L'implémentation

2. La méthode

SDHSS

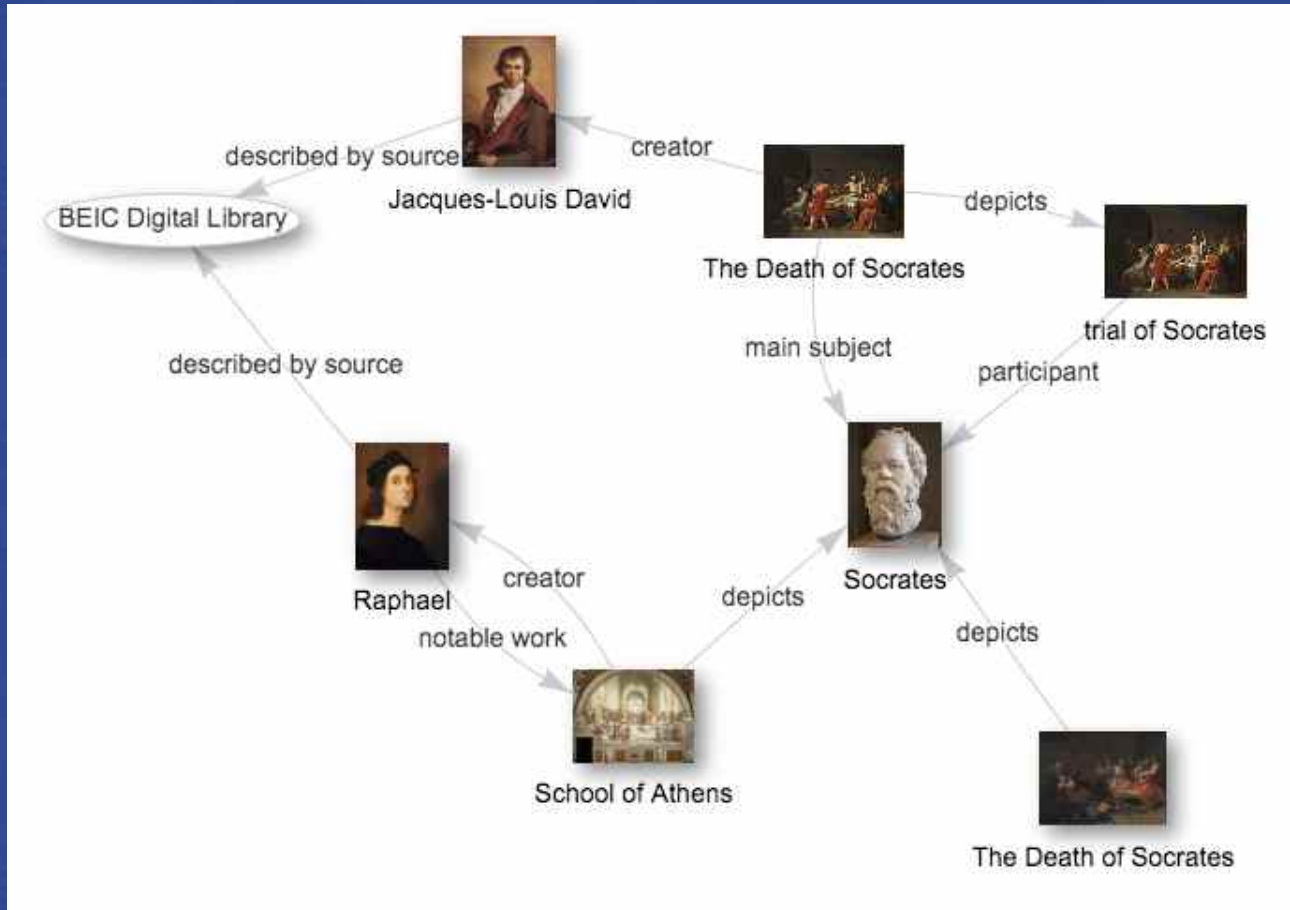
Un écosystème d'ontologies

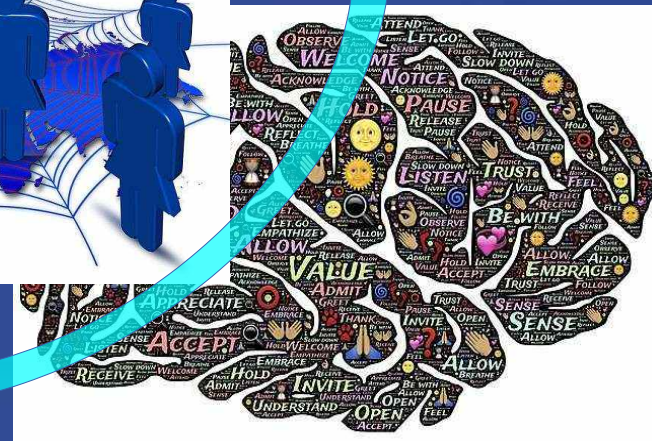
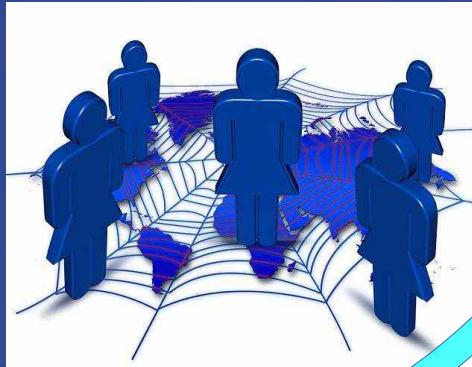
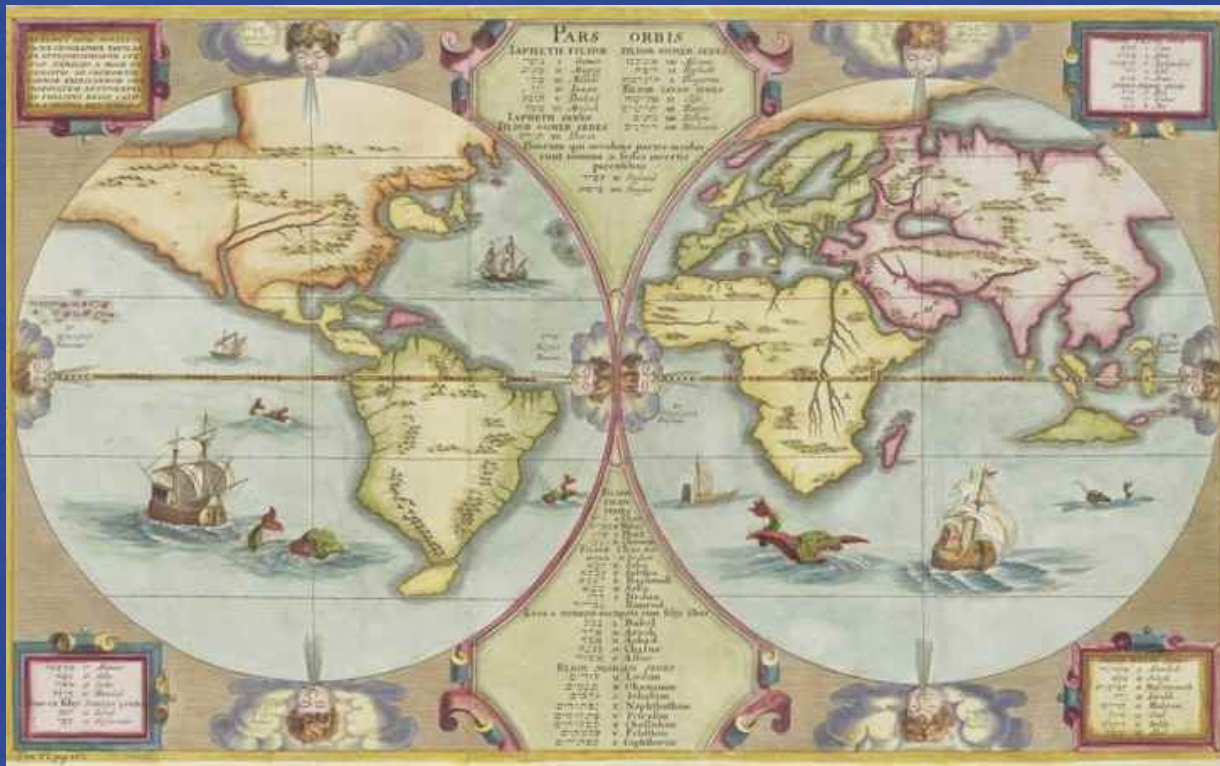
collaboratif et extensible

permettant de fonder l'interopérabilité
et la réutilisation des données de la recherche

dans une perspective trans-disciplinaire

Les LOD en tant que représentation du monde





Graphe d'information ou graphe de savoir (knowledge graph) ?

Information historique, les "faits"

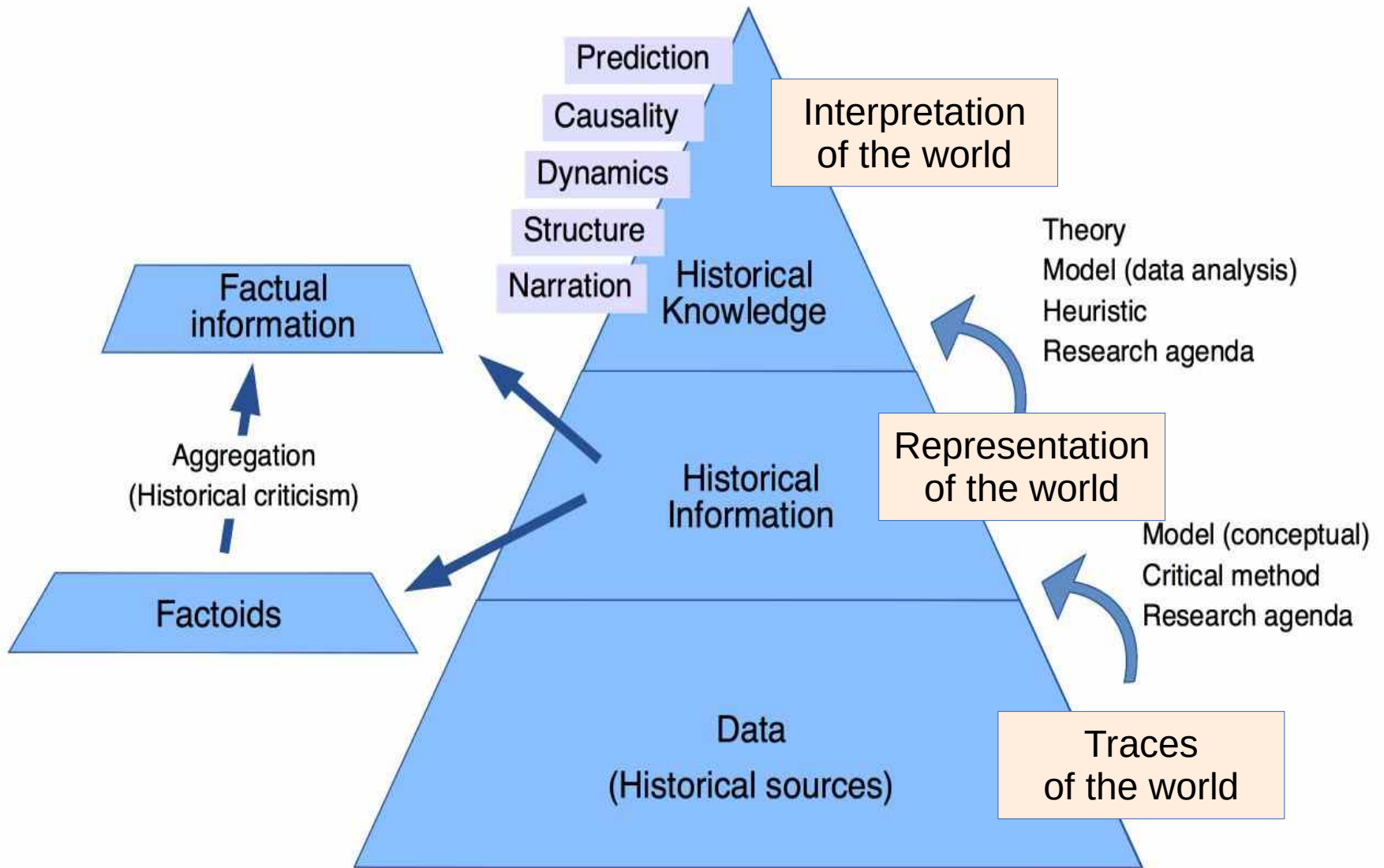
"In 1592, Galileo Galilei was hired by the University of Padua, where he taught mathematics until 1610."

Dictionary of astronomers, 2020

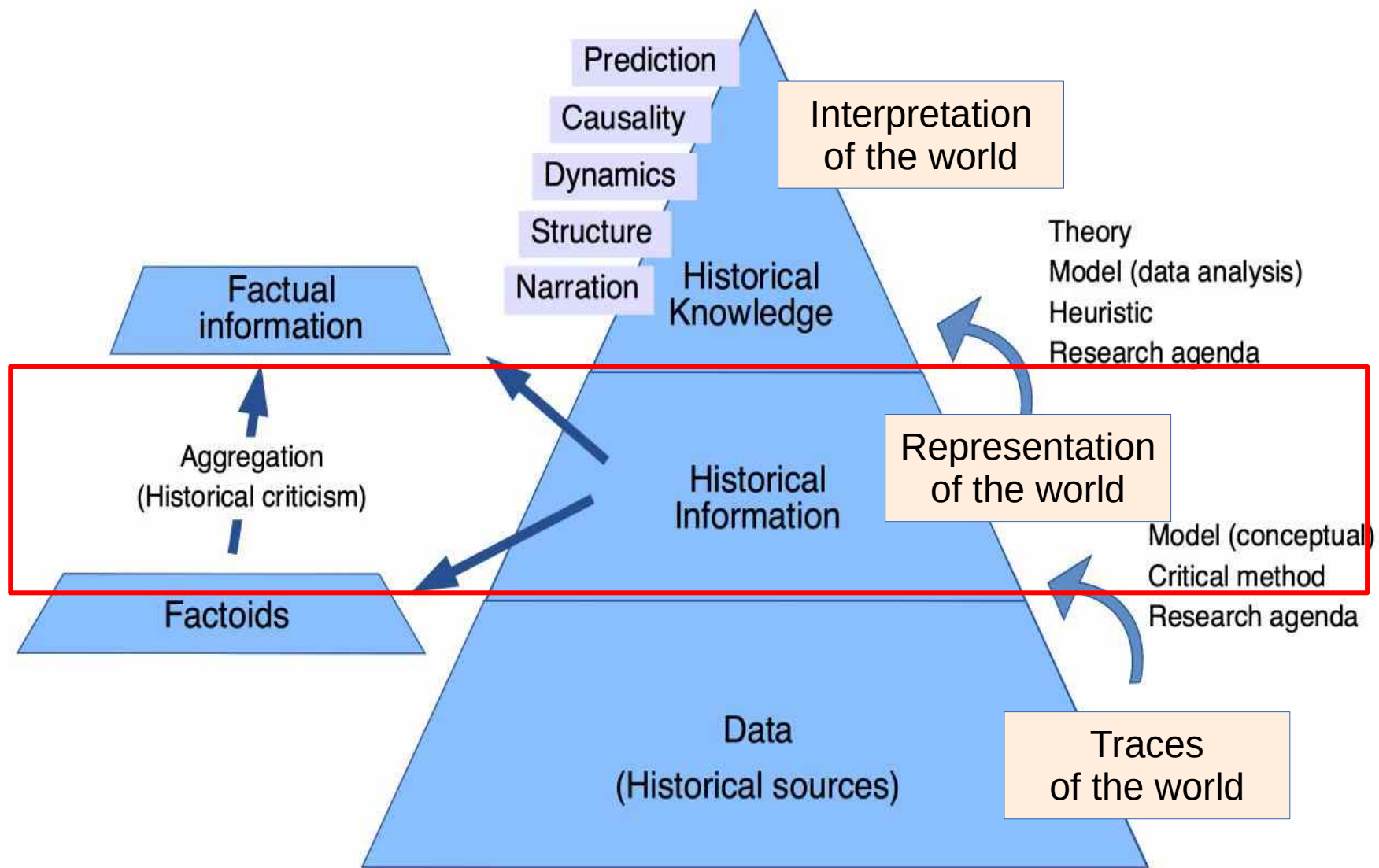
Savoir historique, l'interprétation des faits

"Galileo Galilei was convicted in 1633 not *because* of heresy but for political reasons, in the context of the Thirty Years' War."

Dictionary of astronomers, 2020



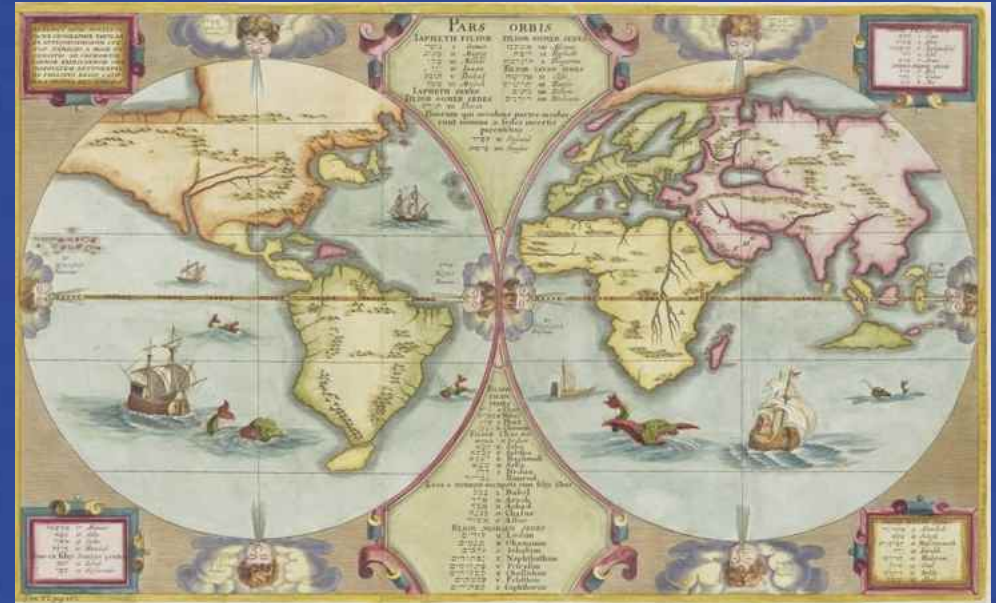
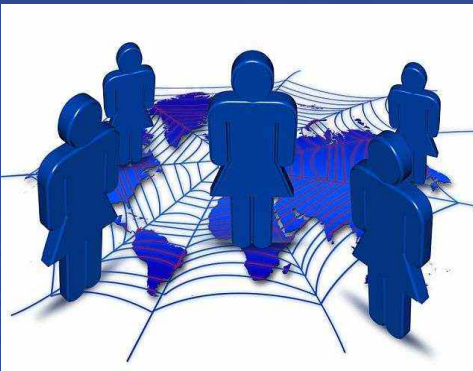
Francesco Beretta (CNRS/Université de Lyon), 7 July 2020 CC BY-NC-SA 4.0



Francesco Beretta (CNRS/Université de Lyon), 7 July 2020 CC BY-NC-SA 4.0

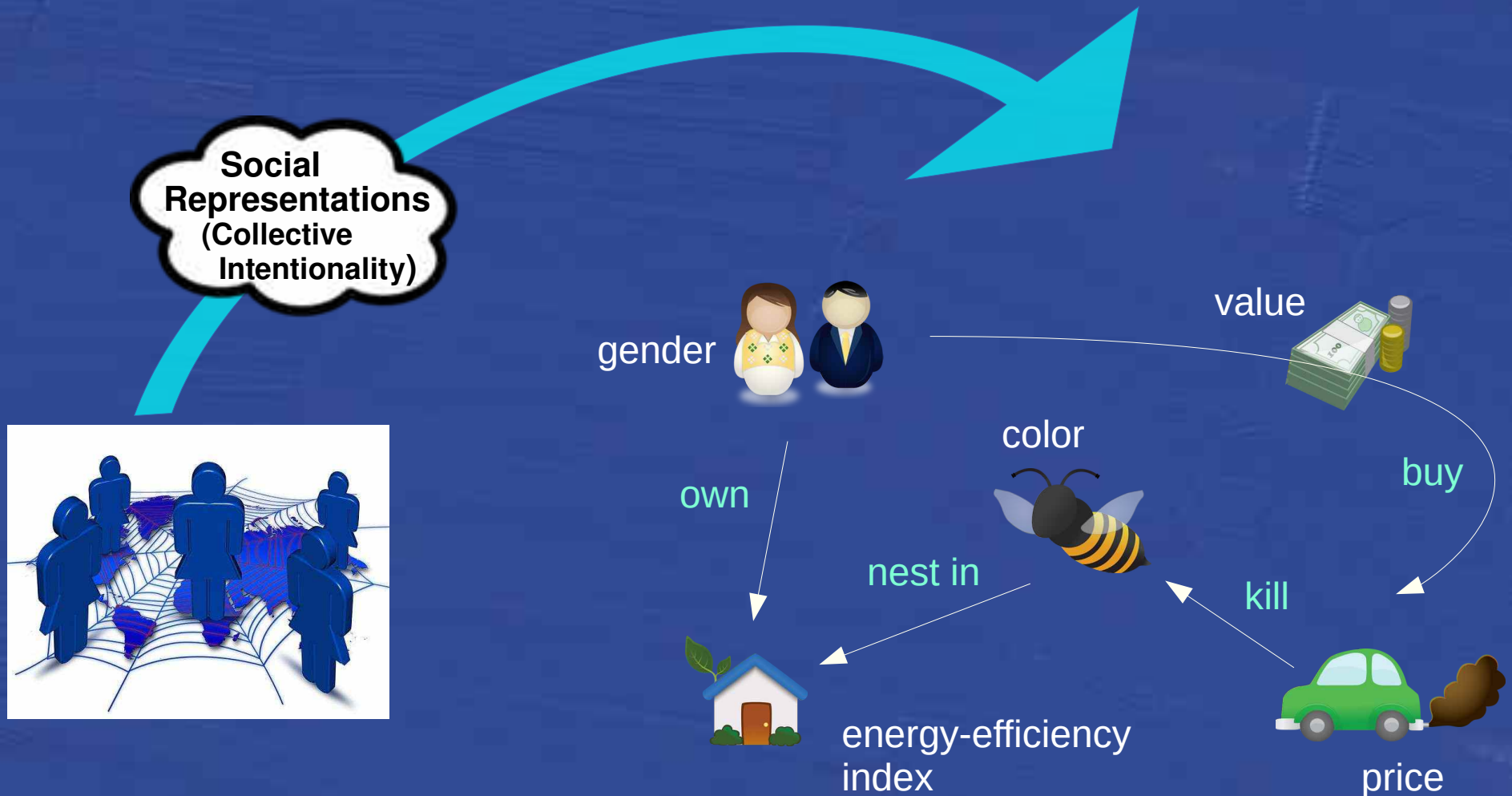
Information comme representation du monde:

**Social
Representations
(Collective
Intentionality)**

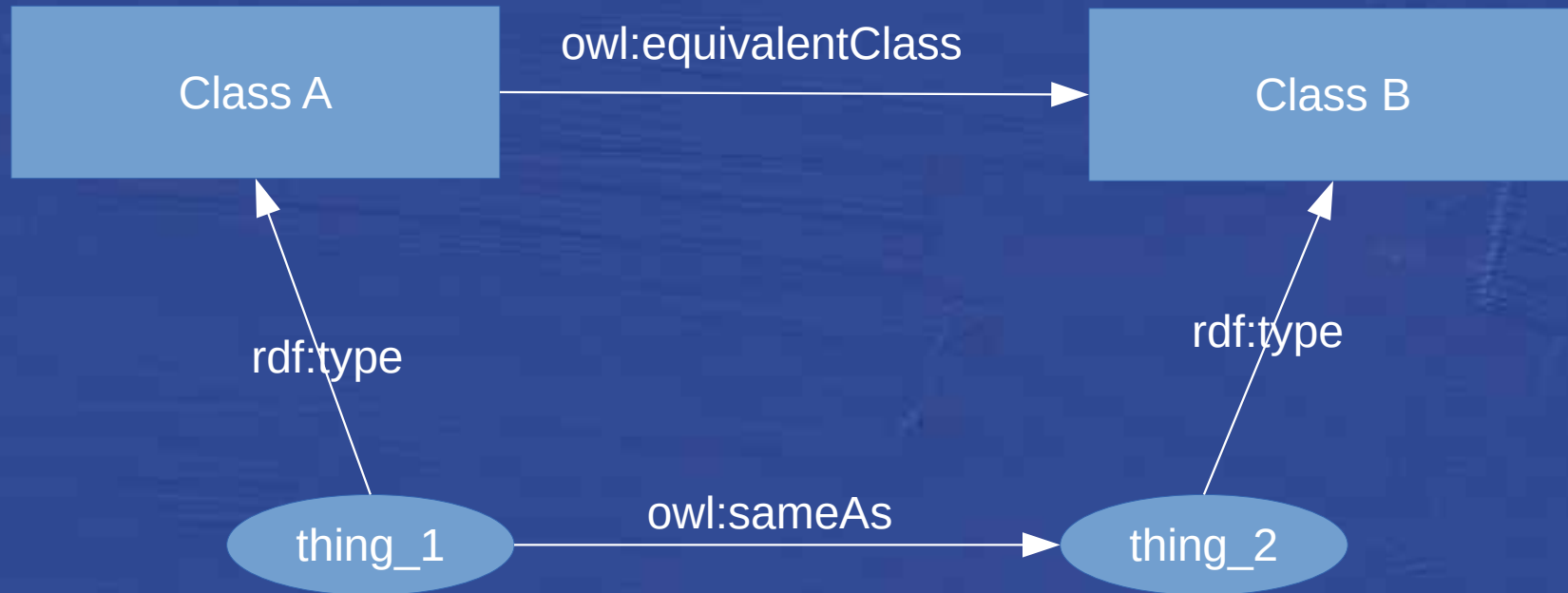


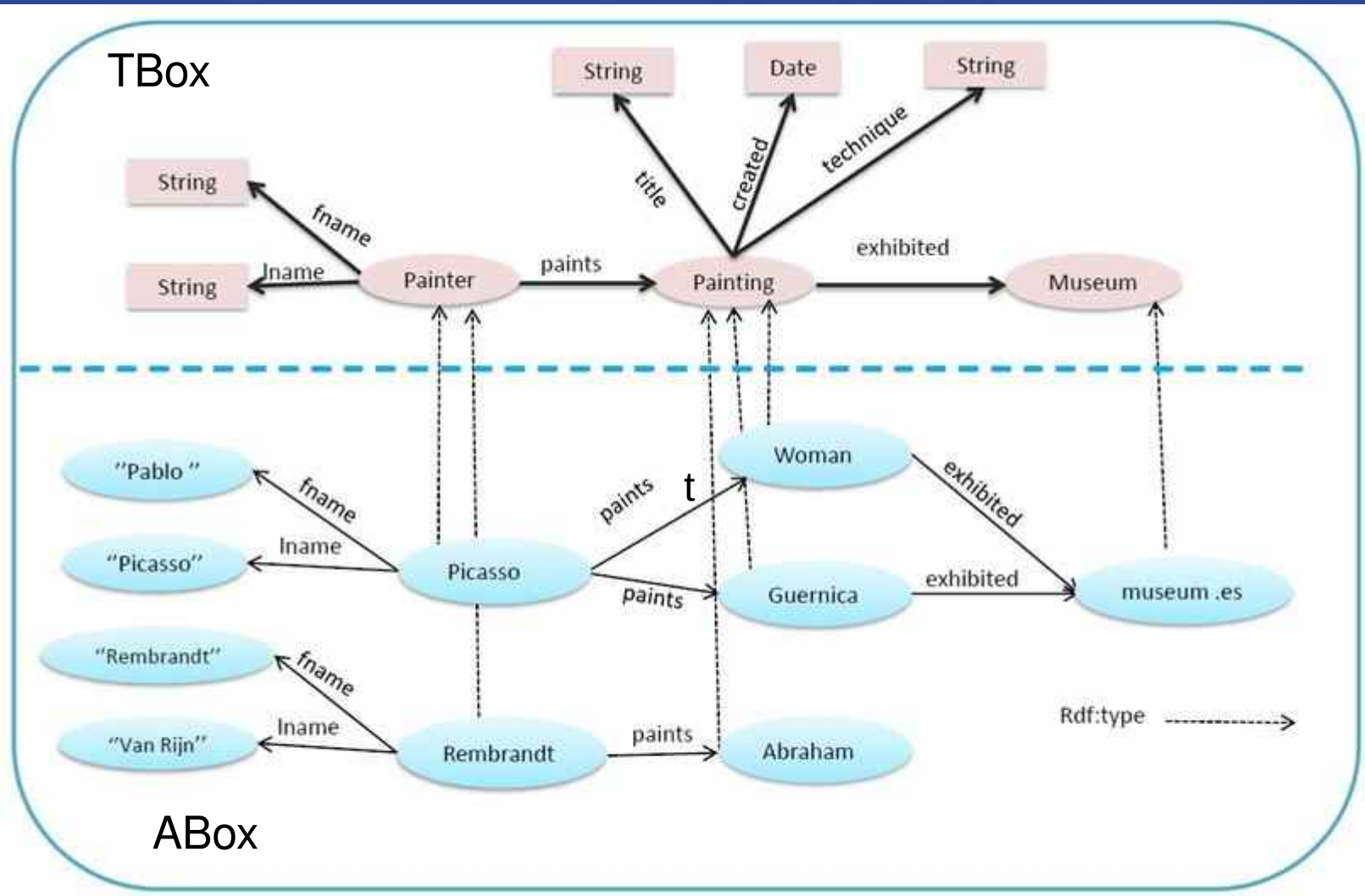
Information comme **representation** du monde:

- représentation des objets
- de leur propriétés (qualités)
- de leur relations



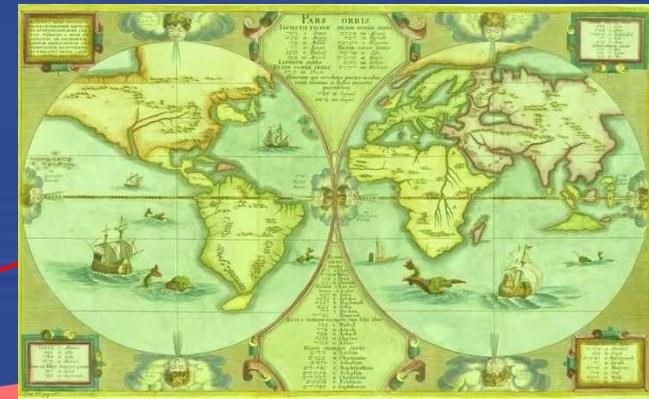
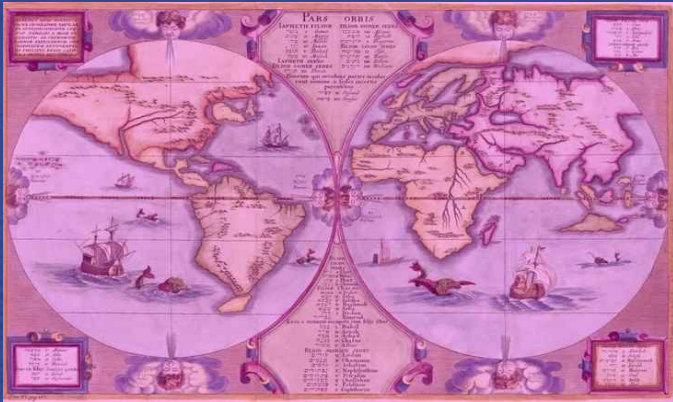
Alignement de graphes d'information





© Dimitris Kotzinos

RDFS – OWL-DL



**Social
representations**

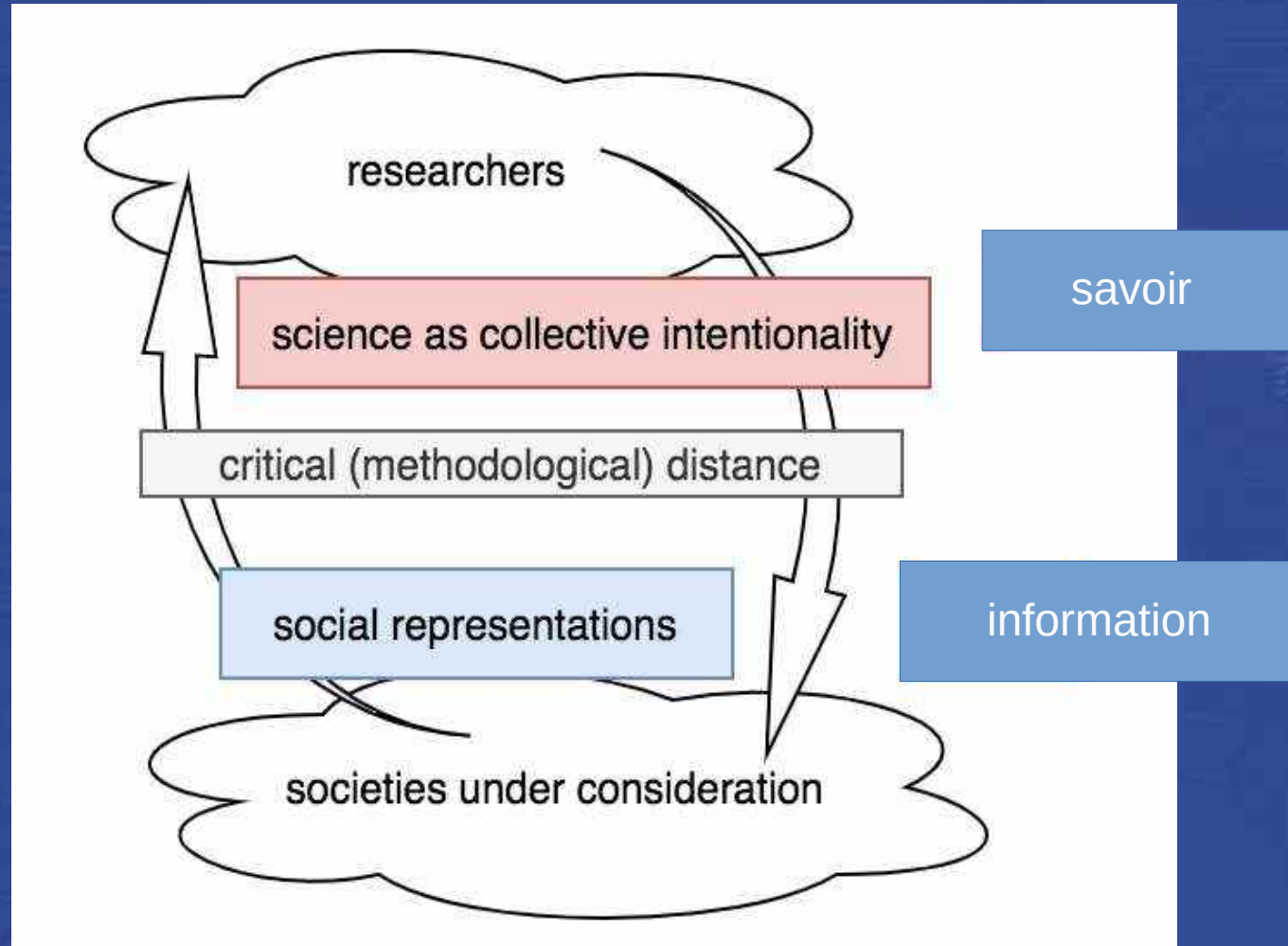
**Social
representations**

Individual
minds

Individual
minds



Comment fonder la transdisciplinarité des ontologies ?



“An ontology is
a formal explicit specification
of a shared conceptualization
of a domain of interest”

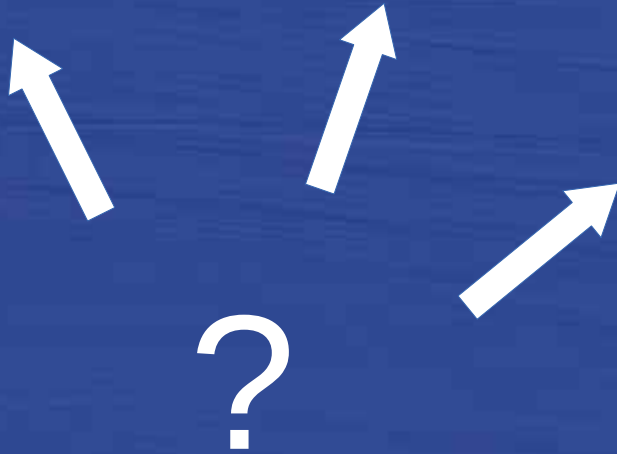
- « Formality – ... a knowledge representation language that is based on the grounds of **formal semantics**. »
- « Consensus – ... an agreement on a domain conceptualization among people in a community. »
- « Conceptuality – ... in terms of conceptual symbols that can be intuitively grasped by humans, as they correspond to the elements in their **mental models**. »
- « Domain Specificity – ... limited to knowledge about a particular **domain of interest**. »

[Domingue et al. 2011, p. 510-511]

CIDOC CRM

DUL
(DOLCE ULTRA LIGHT)

schema.org



Research agenda

Research specific data model

Research data

Foundational ontologies & modelling best practices

Research agenda

Research specific data model

Research data

Foundational ontologies
& modelling best practices

DOLCE + Descriptions and Situations
& object-oriented modelling principles

Research agenda

Research specific data model

Research data

OntoClean

N. Guarino/C. A. Welty, « An Overview of OntoClean », in Steffen Staab, ed., Handbook on ontologies, 2nd ed. Berlin: Springer, 2009.

Essence (as defined by rigid intensional properties)

- A 'student' : not a class but a time-indexed property of a person

Identity (criteria to clearly distinguish individuals)

- The identity of a building as individual does not depend on its changing use

Unity (parthood)

- A crowd of humans vs a group having a plan

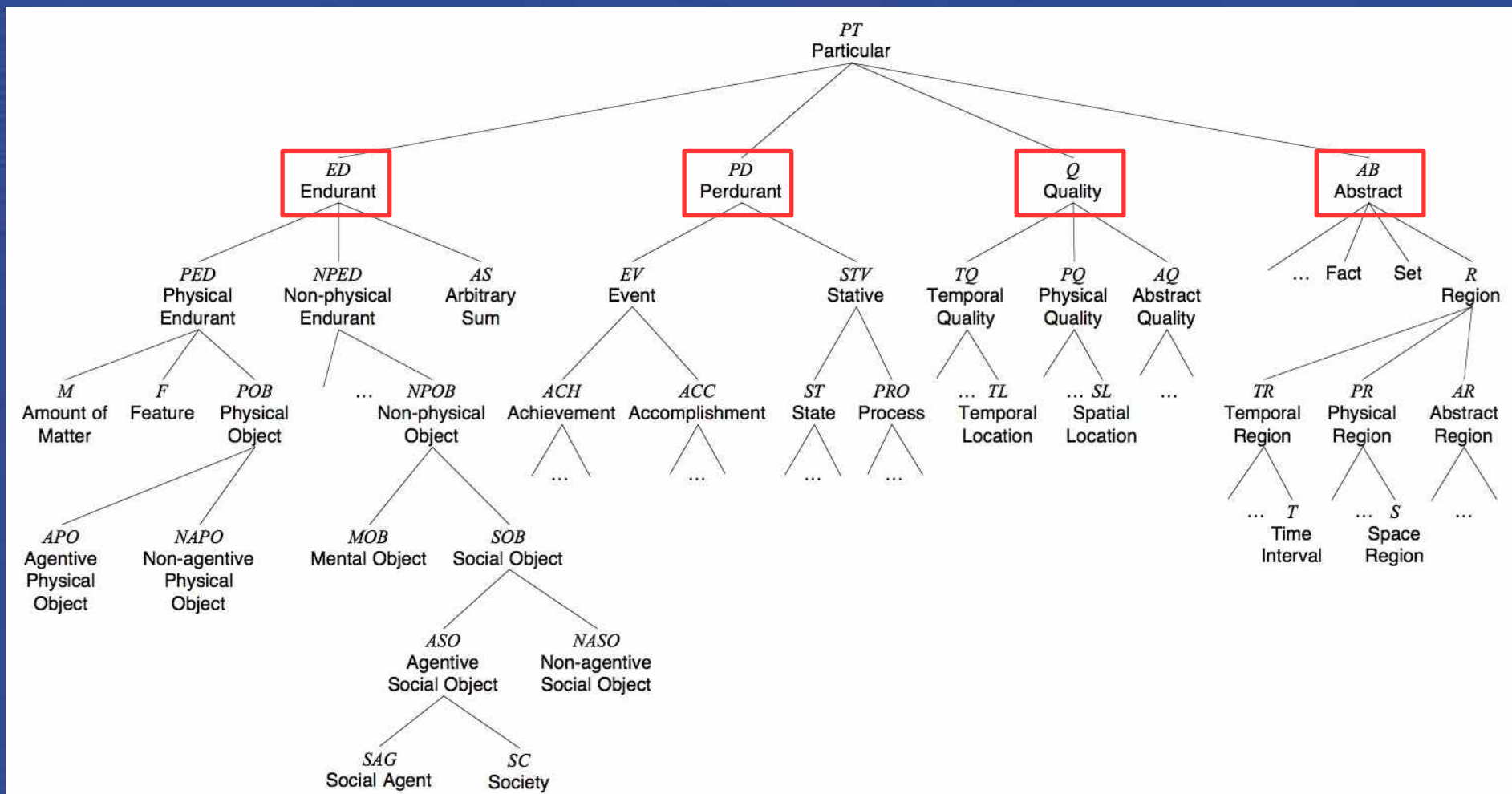
Dependence (one instance implies the existence of another one)

- No human without a birth and no birth without a human

Modelling Best Practices

- Property inheritance, quantifiers, multiple statements on same properties
- Rich controlled vocabularies (researchers) but concise ontology (semantic engineers)

Les ontologies fondationnelles comme outils permettant l'affinement et la vérification de la conceptualisation d'un domaine de discours.



Descriptive Ontology for Linguistic and Cognitive Engineering (DOLCE) – a foundational ontology designed in 2002 in the context of the WonderWeb EU project, developed by Nicola Guarino and his associates at the Laboratory for Applied Ontology (LOA) – WonderWeb Deliverable D18, p.14

Foundational ontologies
& modelling best practices

DOLCE + Descriptions and Situations
& object-oriented modelling principles



Generic, domain related core ontology

Research agenda

Research specific data model

Research data

Foundational ontologies
& modelling best practices



Generic, domain related core ontology

DOLCE + Descriptions and Situations
& object-oriented modelling principles



CIDOC CRM

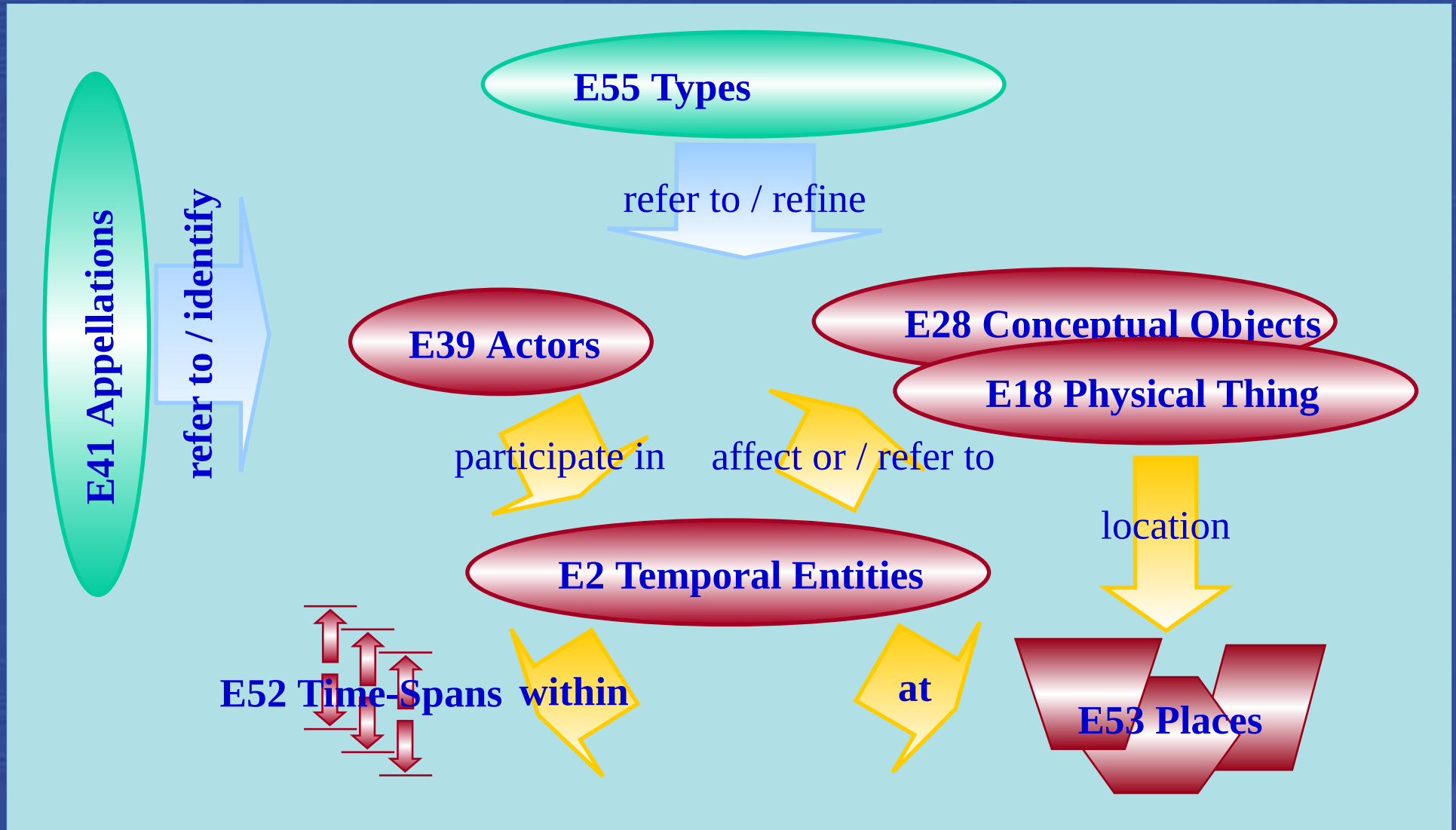
SDHSS

Research agenda

Research specific data model

Research data

The CIDOC CRM (ISO21127:2006)
A semantic framework that provides *interoperability*
between different sources of **cultural heritage information**



crm:E2 Temporal Entity

crm:E4 Period

sdh:C2 Entity Quality

sdh:C2 Epistemic Situation

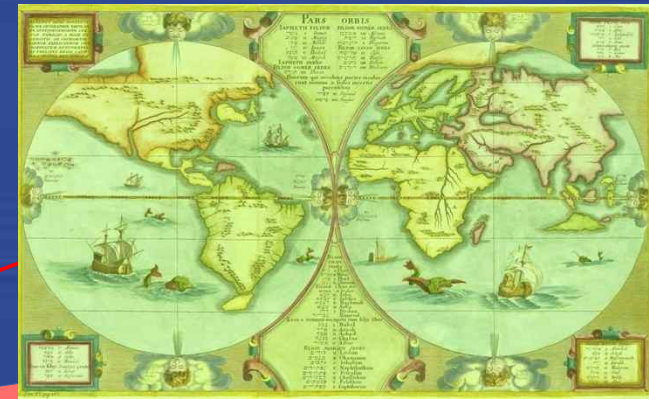
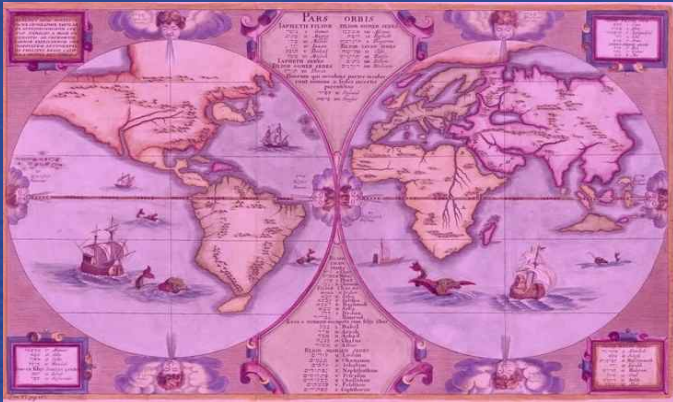
crm:E5 Event

- Length of a bridge
- Color of a bicycle

- Weather in Paris in March 2024
- Economic activity of France in 2023

crm:E7 Activity

SDHSS



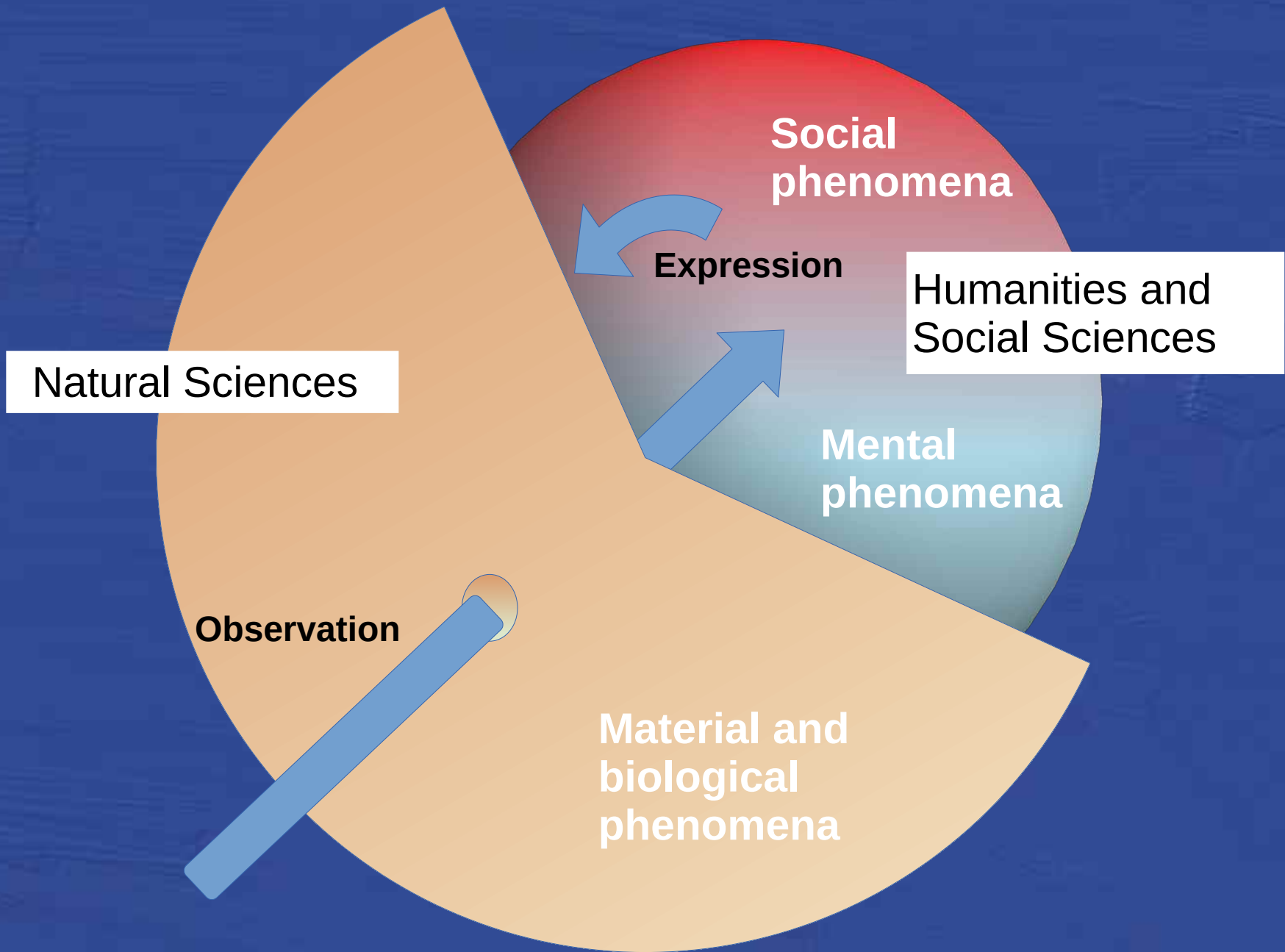
**Social
representations**

**Social
representations**

Individual
minds

Individual
minds





crm:E2 Temporal Entity

SDHSS

crm:E4 Period

sdh:C2 Entity Quality

sdh:C2 Epistemic Situation

sdh:P7
is intention of

sdh:P7
is intention of

crm:E21 Person

sdh:C4 Intention

sdh:C25 Intentional
Collective

sdh:C7 Intentional State

sdh:C10 Intentional Event

Foundational ontologies
& modelling best practices



Generic, domain related core ontology



Domain related extensions

Research agenda

Research specific data model

Research data

DOLCE + Descriptions and Situations
& object-oriented modelling principles



CIDOC CRM

SDHSS



CRM
Archaeo

FRBRoo

Society
& Law
(SDHSS)

Literary life
(SDHSS)

CRMsoc

CRMgeo

Education &
Universities
(SDHSS)

Ships &
navigation
(SDHSS)

Foundational ontologies
& modelling best practices

DOLCE + Descriptions and Situations
& object-oriented modelling principles

Generic, domain related core ontology

CIDOC CRM

SDHSS

Domain related extensions

Research agenda

CRM
Archaeo

FRBRoo

Society
& Law
(SDHSS)

Literary life
(SDHSS)

Research agenda

CRMsoc

CRMgeo

Education &
Universities
(SDHSS)

Ships &
navigation
(SDHSS)

Research specific data model

Projects' research specific extensions

Application profiles

Research data

Interoperable research data

1. Le défi

2. La méthode

3. L'implémentation

3. L'implémentation

Une infrastructure distribuée,
des collaborations nationales et internationales

Le projet symogih.org (2008-2018)

SYMOGIH
Références

Accueil | Documentation | Membres

Références

- Arborescence des classes de types d'unités de connaissances
- Types d'informations
- Types de contenus

Objets

- Acteurs
- Acteurs collectifs
- Objets abstraits
- Caractères sociaux

Sites propulsés par SyMoGIH

- GEO-LARHRA

Système Modulaire de Gestion de l'Information Historique (SyMoGIH)

Le projet

Le projet SyMoGIH a développé un modèle générique de stockage des données historiques permettant leur interopérabilité et leur publication sélective. A partir de ce modèle, une **plateforme collaborative** pour la recherche en histoire a été mise en place, utilisée par plusieurs chercheurs et projets.

Cette plateforme permet le stockage de données primaires concernant toute activité humaine (sociale, économique, intellectuelle, ...), de textes codés en XML (traités selon le standard proposé par la **Texte Encoding Initiative**), d'images et de leur métadonnées, tout en permettant d'associer à ces différents objets leur 'empreinte spatiale'. La réalisation d'un **système d'information géographique** (SIG) joue un rôle essentiel dans le projet.

La plateforme permet :

- la modélisation progressive et évolutive de l'information historique grâce à un dictionnaire de **types d'unités de connaissance** ;

<http://symogih.org>

SPARQL Endpoint

Défi données MaDICS-ADOC 2018 : tinyurl.com/data-challenge-2018




Enrichir et exploiter un corpus de données historiques
publiées sous forme de LOD.

Le projet *SIPROJURIS*.



Système d'information des professeurs de droit (1804-1950)

SIPROJURIS

Bienvenue sur le site du projet SIPROJURIS.



CODE
UNIVERSITAIRE
ou
LOIS ET STATUTS
DE L'UNIVERSITÉ ROYALE DE FRANCE



<http://siprojuris.symogih.org>

SPARQL-Endpoint

- Startseite
- Beispiel-Titel
- Download
- Dokumentation
- SPARQL-Endpoint
- Impressum
- English

```
PREFIX rdf:<http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs:<http://www.w3.org/2000/01/rdf-schema#>
PREFIX owl:<http://www.w3.org/2002/07/owl#>
PREFIX dc:<http://purl.org/dc/elements/1.1/>
PREFIX dct:<http://purl.org/dc/terms/>
PREFIX dcmitype:<http://purl.org/dc/dcmitype/>
PREFIX bibo:<http://purl.org/ontology/bibo/>
PREFIX frbr:<http://purl.org/vocab/frbr/core#>
PREFIX event:<http://purl.org/NET/c4dm/event.owl#>
PREFIX foaf:<http://xmlns.com/foaf/0.1/>
PREFIX skos:<http://www.w3.org/2004/02/skos/core#>
PREFIX geonames:<http://www.geonames.org/ontology#>
PREFIX marcrel:<http://id.loc.gov/vocabulary/relators/>
PREFIX rdagr1:<http://rdvocab.info/Elements/>
PREFIX umbel: <http://umbel.org/umbel#>
PREFIX b3kat: <http://bsb-muenchen.de/ont/b3katOntology#>

SELECT ?type (count(*) as ?eff) WHERE {
  ?s a ?type
}
group by ?type
order by desc(?eff)
LIMIT 50
```

Ergebnisse als XHTML anzeigen

Zurücksetzen

Submit

SPARQL – endpoint B3Kat

Bayerische Staatsbibliothek, Bibliotheksverbund
Bayern, Kooperative Bibliotheksverbund
Berlin-Brandenburg

<https://lod.b3kat.de/doc/sparql-endpoint>

Utiliser les métadonnées des bibliothèques pour répondre à une question de recherche

Evolution des territoires en Italie

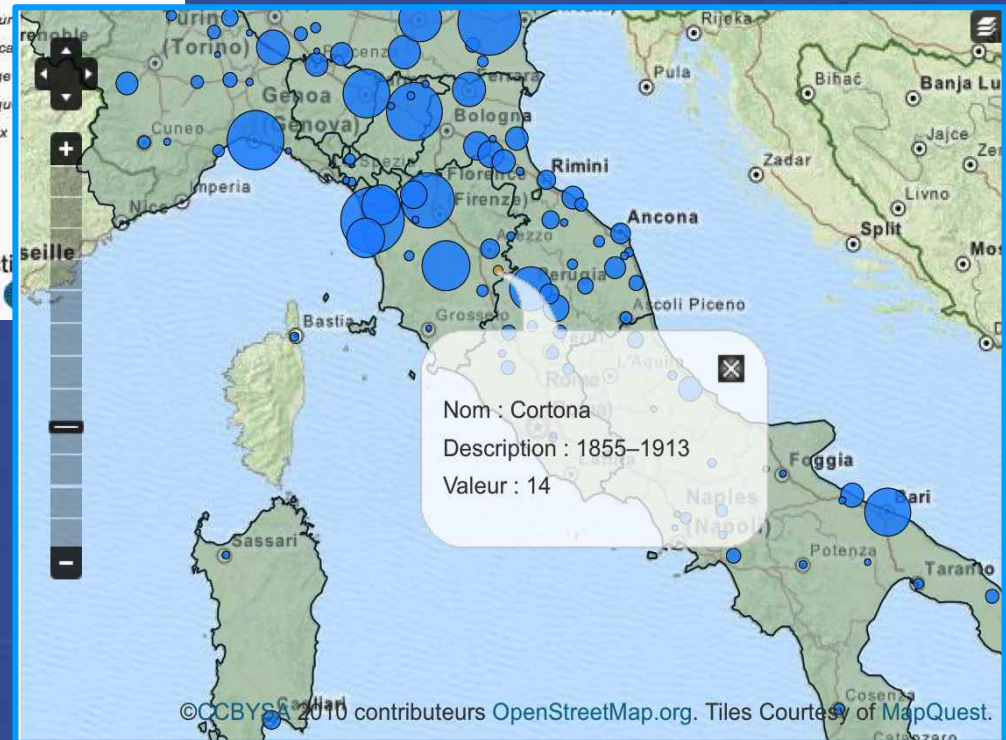
Site expérimental. Données non exhaustives, en cours de production.



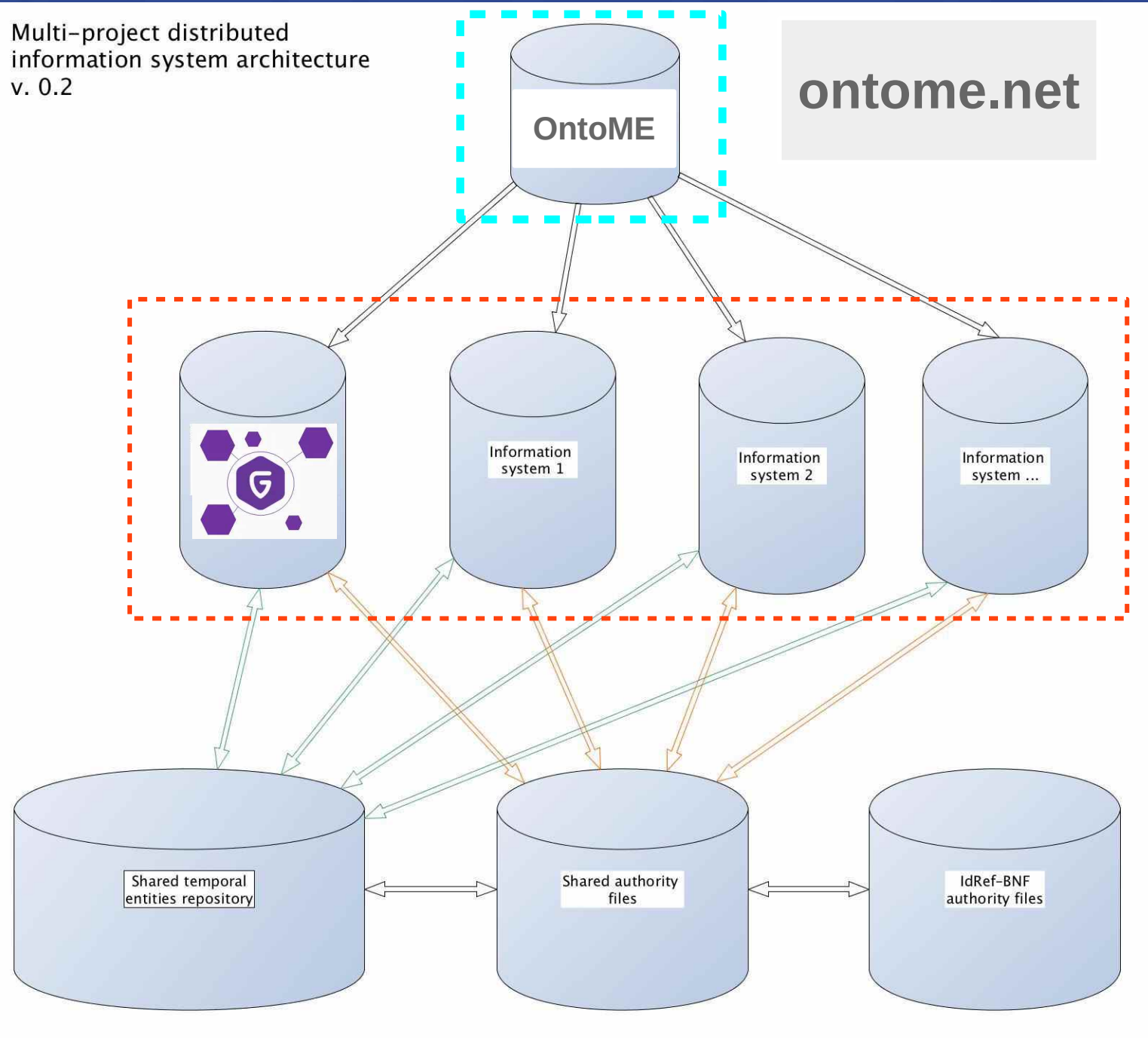
Dates significatives

- 1815-06-09
- 1829-12
- 1847-12
- 1859-11-10
- 1860-03-24
- 1860-11-05
- 1861-03-17
- 1866-10-03
- 1870-10-02
- 1920-11-12
- 1929-02-11
- 1947-02-10

Cliquer sur
afficher la ca
Un passage
date indiqu
liées aux
territoires.
Projecti
points




Multi-project distributed
information system architecture
v. 0.2



Classes tree

C10 Intentional Event (#551)

Reset

 Use mouse wheel (or double click / shift + double click) to zoom in/out. Use left mouse button to pan.



Maritime History:
<https://ontome.net/namespace/66>

Man-Made Object – E22

Ship – C2

C2 Ship

Subclass of: [E22 Man-Made Object](#)

Scope note: Used to denote a watercraft that travels the world's oceans and other sufficiently deep waterways, carrying passengers or goods, or in support of specialized missions, such as defense, research and fishing.

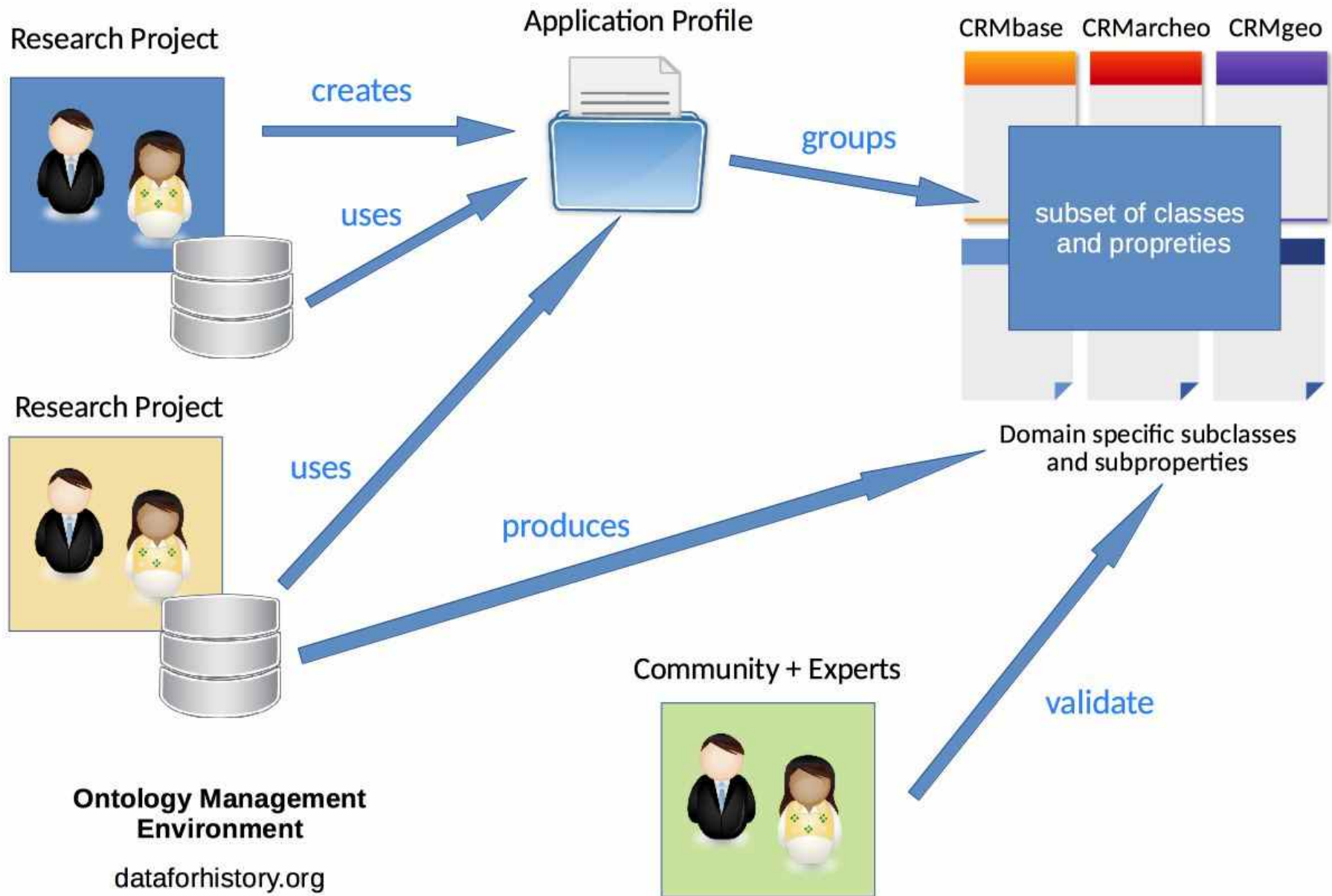
Examples: tba

In First Order Logic: $C2(x) \supset E22(x)$

Outgoing properties: [P6 has ship type](#) → [C3 Ship type](#)

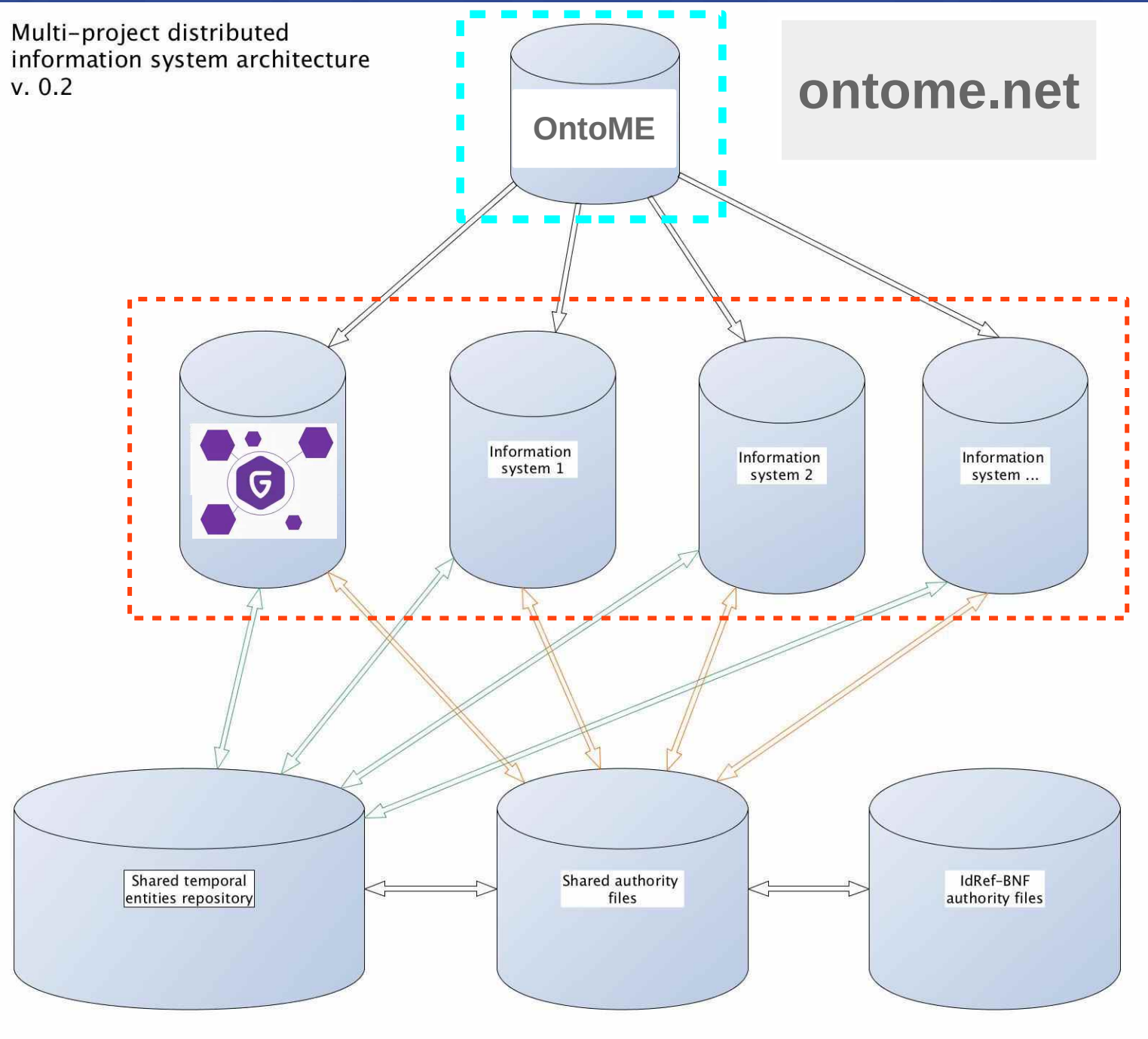
Incoming properties: [C1 Ship voyage](#) → [P3 carried out by](#)
[C12 Shipbuilding](#) → [P7 has built](#)





ontome.net

Multi-project distributed
information system architecture
v. 0.2



geovistory.org

Geovistory

Virtual Research Environment for Humanities and Social Sciences



Featured Projects

Tagebücher Anna Maria Preiswerk-

Digitale Edition der Tagebücher der Anna Maria Preiswerk-Iselin (1758-1840).

Open →

ANR Processetti

Les Processetti : Migration et mariage à Venise au 16ème/17ème siècle.

Open →

Maritime History

Historical information about the Dutch East India Company, ready to explore and re-use at your hand.

Open →

Roma's deportation

Individual trajectories, and collective fates.

Open →

Geovistory : un nouvel environnement virtuel de recherche construit dans une logique de graphe sémantique collaboratif

The screenshot displays the Geovistory web application. At the top, the browser address bar shows the URL `geovistory.com/projects/84760/edit`. The page header includes navigation links for Home, Your Projects, and Maritime history, along with a user profile icon and a 'Beta' badge.


The main interface is divided into several sections:

- Left Sidebar:** Contains navigation icons for Sources, Entities, Analysis, and Stories.
- Map:** A world map showing various geographical locations. A red circle highlights a location in Southeast Asia, identified as Jakarta ID. A 'CESIUM Ion' logo is visible in the bottom left of the map area.
- Information Panel:** A pop-up window titled 'All ship voyages' provides details for the selected location:
 - Date: Apr 2, 1595 AD
 - Activated Place: Jakarta ID (Geographical Place)
 - Value of Place at Date: 0 (with a 'show details' link)
- Time-series Chart:** A line graph at the bottom shows data from 1640 to 1750. The y-axis ranges from 0 to 30. The chart displays a highly volatile blue line representing the value of the place over time. A 'feedback' button is located in the bottom right corner of the chart area.
- Bottom Controls:** Includes a search icon, a zoom slider, a full-screen icon, and a dropdown menu currently set to 'Active: Jakarta ID'.

Geovistory : a VRE for HSS research ...

Project's Open Data SPARQL access

Ship Voyages * Selection of triples * +

 https://sparql.geovistory.org/api_v1_project_84760

```
1 PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
2 PREFIX ontome: <https://ontome.net/ontology/>
3 PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>
4
5 SELECT *
6 WHERE {
7   {
8     SELECT ?label ?long ?lat (count(?sv) * 0.5 as ?radius) (count(?sv) as ?number) ("Arrival Place" as ?type) ?link
9     WHERE {
10
11      # Geographical Place -had presence-> Presence -was at-> Place (lat/long)
12      ?s ontome:p147i/ontome:p148 ?place.
13
14      # Geographical Place -label-> label
```

 Table  Response  Map Circles 103 results in 0.535 seconds

... open and connected to the Semantic Web.

Semantic Data for Humanities

Projet de publication de données de la recherche sémantifiées
animé par l'ABES et le LARHRA

<https://dataforhumanities.org/sparql-endpoint/prelib-v1>

The screenshot shows the website interface for the PRELIB SPARQL endpoint. At the top, there is a navigation bar with links: Data For Humanities, Home, Projects, Data, Guides, and About us. The main content area is divided into two columns. The left column contains a sidebar with sections for 'ABES SPARQL ENDPOINT' and 'GEOVISTORY SPARQL ENDPOINTS', each with an 'Endpoint description' link. The right column features the main heading 'PRELIB — Projet de recherche en littérature bretonne', followed by a sub-heading 'Jeu de données converti en RDF' and a bulleted list of links: 'Site original du projet', 'Site de publication de données SQL interrogeable', and 'Documentation de la transformation'. Below this, there are sections for 'Exemples de requêtes' and 'Liste des classes avec effectifs', with a link to 'Voir les résultats de la requête.' A code block at the bottom displays a SPARQL query:

```
SELECT ?class (COUNT(*) AS ?eff)<br/>WHERE {GRAPH <https://dataforhumanities.org/sparql-endpoint/prelib-v1> {?s a ?class}}<br/>GROUP BY ?class<br/>ORDER BY DESC(?eff)
```

PRELIB

[Personnes](#) [Œuvres](#) [Éditions](#) [Revue](#)s [Collectifs](#) [Prix](#) [Archives](#)

Projet de recherche en littérature de langue bretonne

Qu'est-ce qui incite un individu à écrire en breton ?

Du point de vue de la sociologie de la littérature, l'image de l'écrivain considéré comme un génie isolé et détaché de toute contingence est balayée au profit de celle d'un individu inscrit « dans des conditions d'existence sociales et économiques » (Bernard Lahire, *La condition littéraire. La double vie des écrivains*, Paris, La découverte, 2006, p. 26).

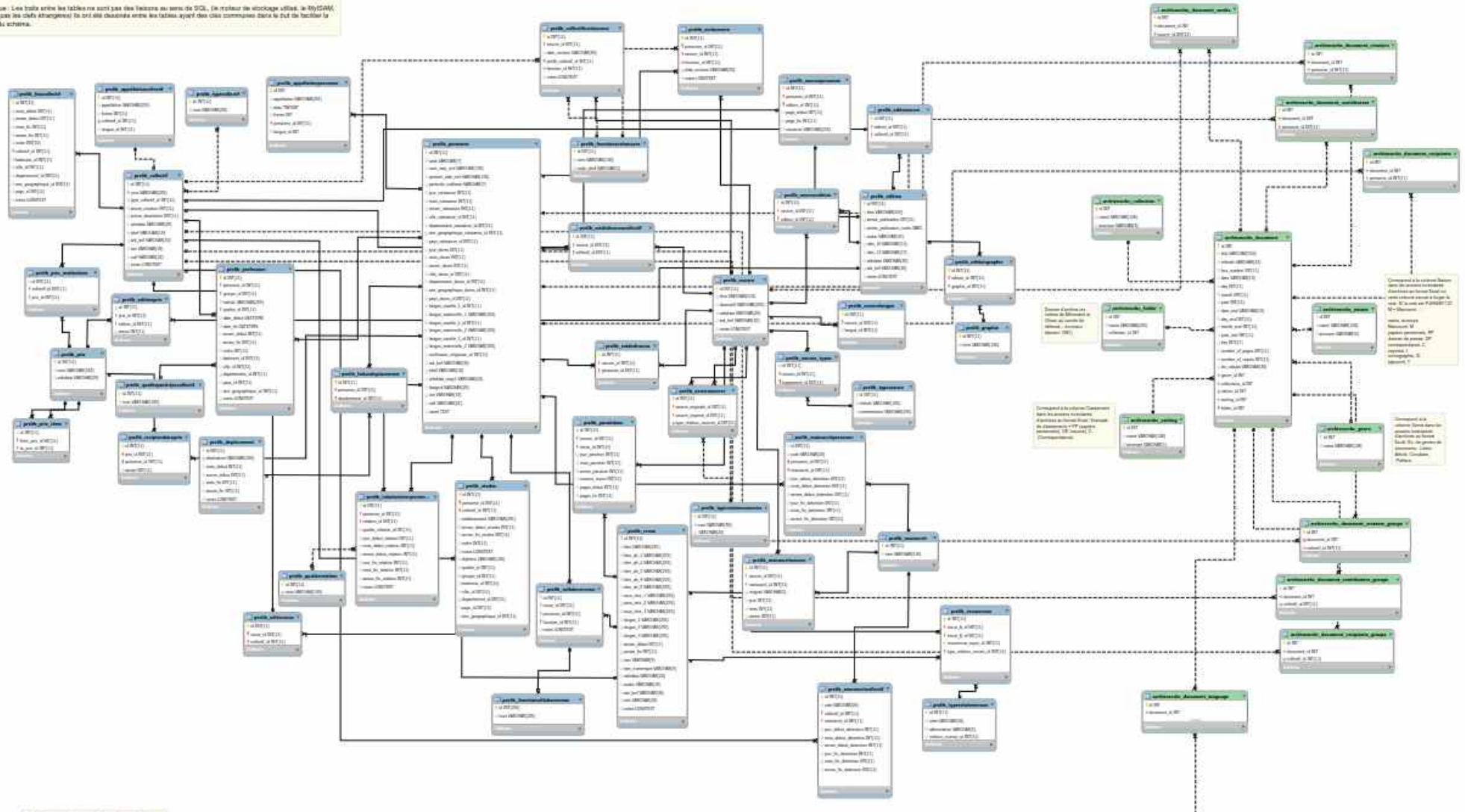
La base de données PRELIB est une base de données [prosopographique](#) des acteurs de la littérature bretonne et de leur production littéraire dont l'objectif est de chercher dans quel mesure l'environnement familial, la scolarité, l'adhésion à une association ou à un parti politique, la rencontre et la stimulation d'un « maître », la fréquentation d'un groupe, c'est-à-dire tout ce qui, à différents niveaux, relève du déterminisme social et de la sociabilité d'un individu, peut provoquer et éventuellement faire perdurer l'envie, la volonté, la nécessité d'écrire en breton.

Quelles données contient la base PRELIB ?

La base de données contient des informations biographiques sur 3058 individus (dont 1556 contributeurs¹ à des œuvres) liés à :

- 993 collectifs (associations, partis politiques, syndicats, éditeurs, imprimeurs et maisons d'édition², etc.),
- 289 revues,
- 6241 œuvres littéraires du Moyen Âge à nos jours,
- 1311 documents d'archives (dont des échanges épistolaires).

Remarque : Les traits noirs les relient au sein des tables au sein de SQL. Un trait noir et rouge affecte la MySQL, ne peut pas les être étrangères) de cet été discuté entre les tables ayant des clés étrangères dans le SQL de la table la lecture du schéma.



Virtuoso SPARQL Query Editor

Default Data Set Name (Graph IRI)

Query Text

```
SELECT ?class (COUNT(*) AS ?eff)<br/>
WHERE {GRAPH <https://dataforhumanities.org/sparql-endpoint>
?class rdfs:subClassOf* <https://dataforhumanities.org/sparql-endpoint>
}
GROUP BY ?class
ORDER BY DESC(?eff)
```

Sponging:

Use only local data (including data retrieved before)

Results Format:

HTML

Execution timeout:

0 milliseconds (values less than 1000 are in microseconds)

Options:

Strict checking of void variables Log debug

(The result can only be sent back to browser, not saved on the server, see details)

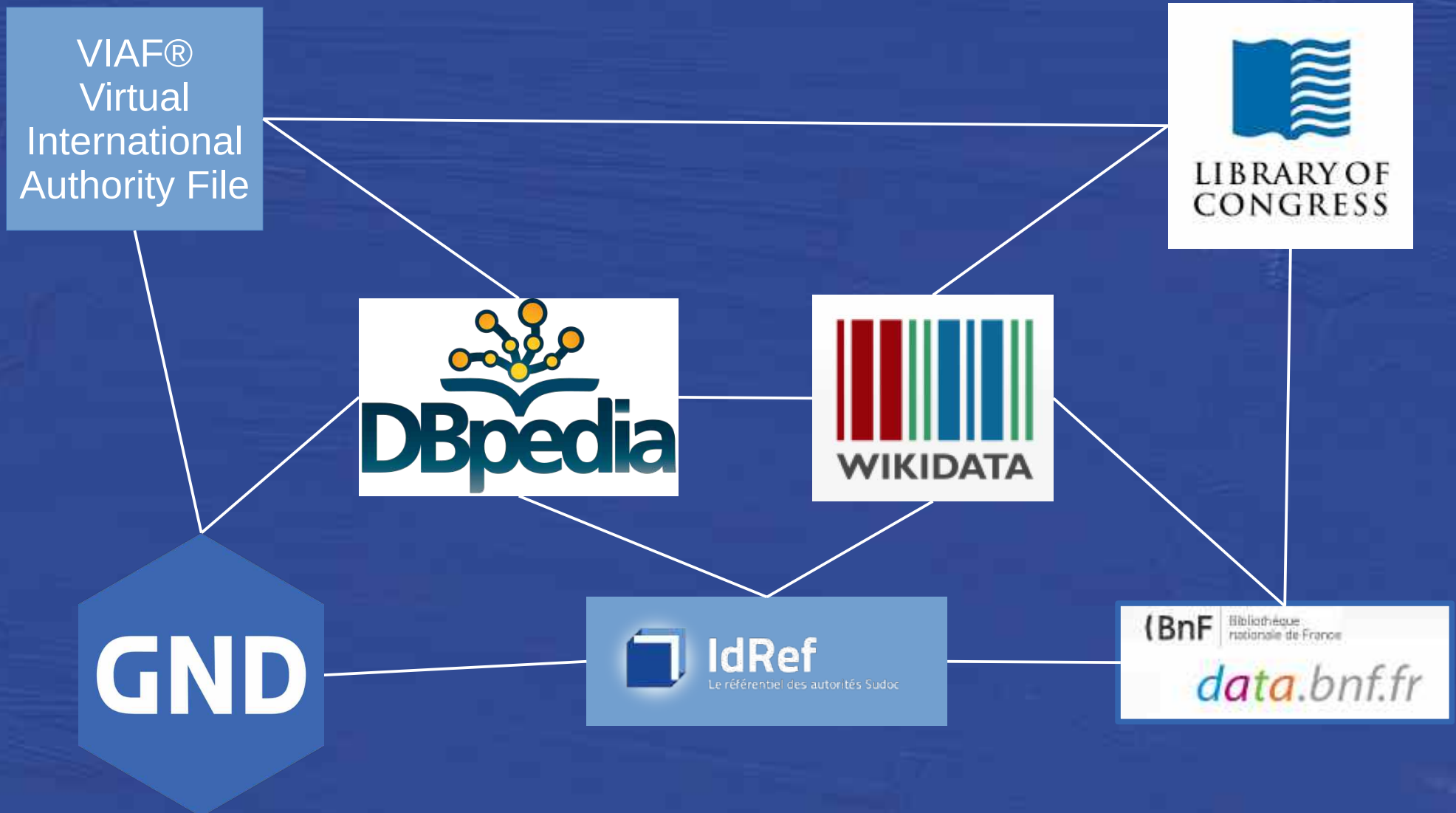
Run Query Reset

class	eff	callret-2
http://www.cidoc-crm.org/cidoc-crm/E52	12651	br/
http://iflastandards.info/ns/fr/frbr/frbroo/F23	12616	br/
http://iflastandards.info/ns/fr/frbr/frbroo/F28	5969	br/
http://iflastandards.info/ns/fr/frbr/frbroo/F24	5850	br/
http://iflastandards.info/ns/fr/frbr/frbroo/F3	5822	br/
http://iflastandards.info/ns/fr/frbr/frbroo/F2	5343	br/
http://www.cidoc-crm.org/cidoc-crm/E33	5343	br/
http://www.cidoc-crm.org/cidoc-crm/E41	4792	br/
https://ontome.net/ns/social-legal-economic-life/C8	2805	br/
http://www.cidoc-crm.org/cidoc-crm/E21	2720	br/
http://www.cidoc-crm.org/cidoc-crm/E67	2720	br/
http://www.cidoc-crm.org/cidoc-crm/E69	2720	br/
https://ontome.net/ns/intellectual-literary-life/C1	2668	br/
https://ontome.net/ns/social-legal-economic-life/C3	1340	br/
http://www.cidoc-crm.org/cidoc-crm/E74	890	br/
https://ontome.net/ns/sdhss/C13	800	br/
http://www.cidoc-crm.org/cidoc-crm/F23	470	br/

Conclusion

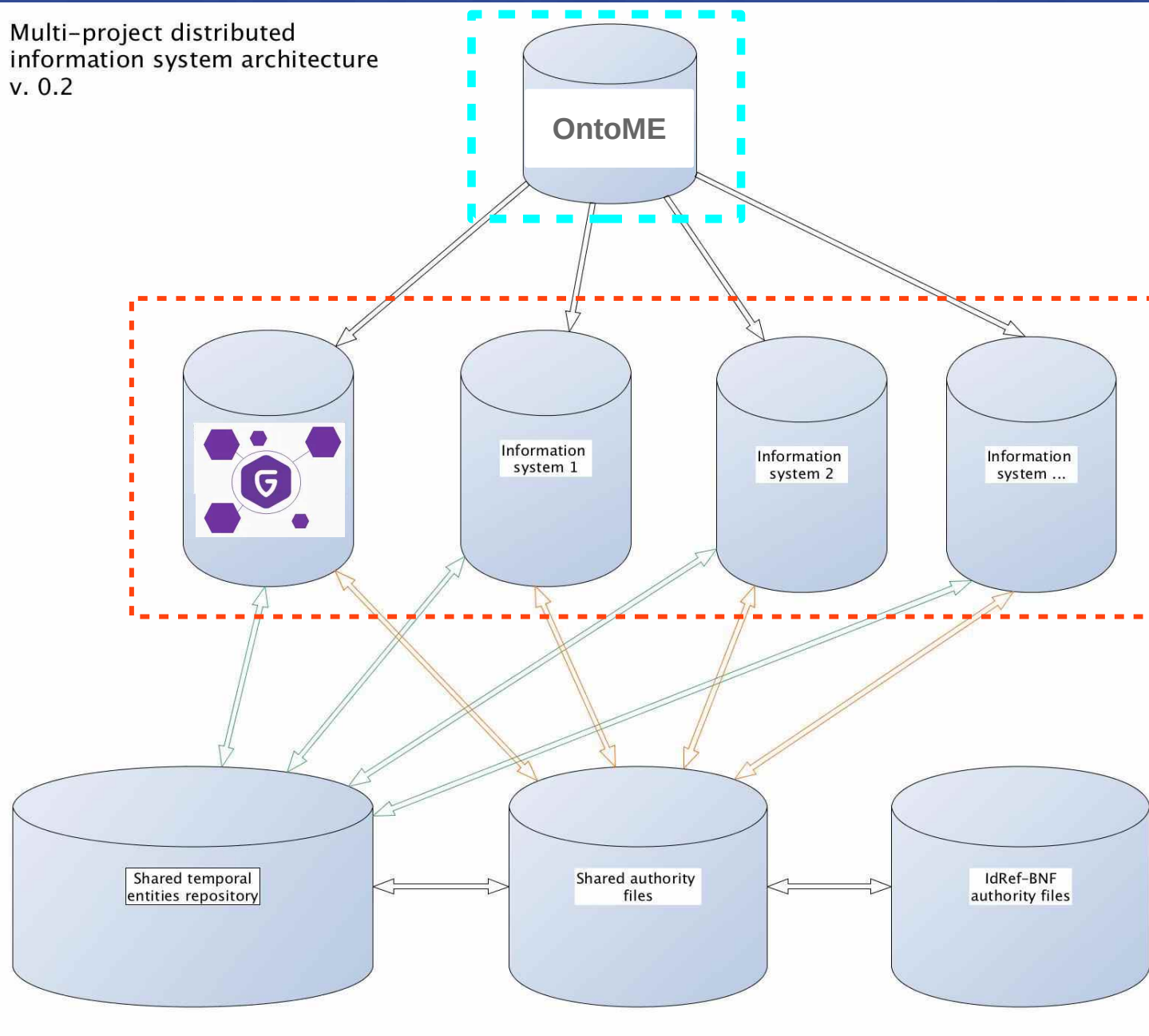
Faire levier sur les LOD

pour partager les données issues de la recherche en SHS

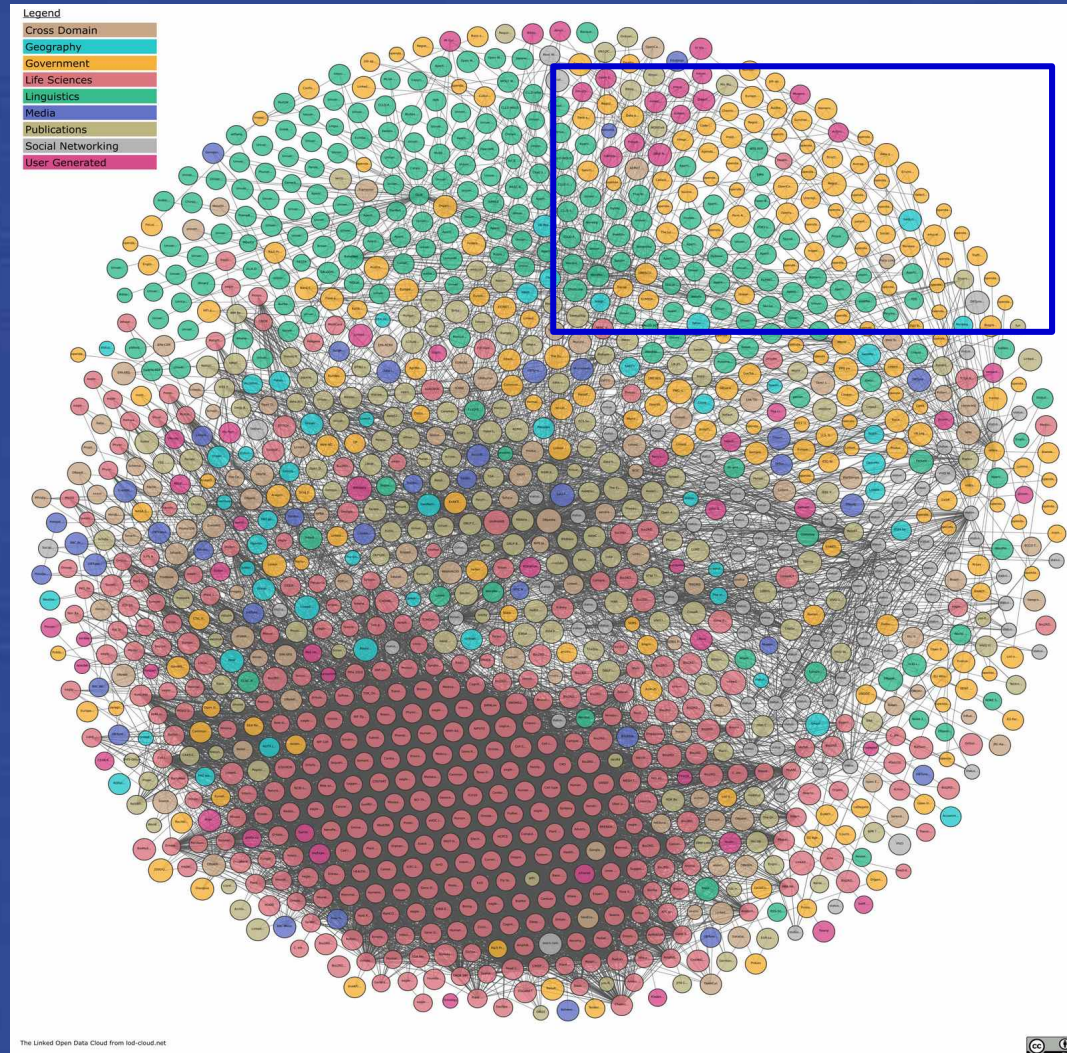


Construire collectivement la méthodologie et l'infrastructure nécessaires

Multi-project distributed
information system architecture
v. 0.2



Un jour une portion importante des données de la recherche en SHS seront une partie intégrante et substantielle du web sémantique ?



<https://lod-cloud.net/>

Publications

- Semantic Data for Humanities and Social Sciences (SDHSS): an Ecosystem of CIDOC CRM Extensions for Research Data Production and Reuse. Thomas Riechert e.a., *Professorale Karrieremuster Reloaded*, HTWK Leipzig / OA-HVerlag, pp.73-102, 2024, 978-3-96627-050-2. {10.33968/9783966270502-05}.
- Données ouvertes liées et recherche historique : un changement de paradigme. *Humanités numériques*, 2023, 7, {10.4000/revuehn.3349}.
- Données liées ouvertes et référentiels public : un changement de paradigme pour la recherche en sciences humaines et sociales. *Arabesques*, 2024, 112, pp.26-27. {10.35562/arabesques.3820}.

Rejoignez notre projet !

sdhss.org

dataforhumanities.org

geovistory.org

