

Semantic Web: standards and languages for knowledge representation

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MELODI group

<http://www.irit.fr/-Equipe-MELODI->



Example 2 : Semantic annotation with a knowledge base

<http://labs.sparna.fr/> Thomas Francart

What is this page ? see [below](#), that [blog post](#), and more examples on [labs.sparna.fr](#).

Français ? rechargez la page [en français](#).

Horsemeat scandal: Scotland bans frozen beefburgers in schools

School kitchen in North Lanarkshire finds burger testing positive for horse DNA as Birds Eye withdraws some products

Schools in Scotland have been told not to serve frozen beefburgers, while in Wales supplies to schools in seven local authorities have been withdrawn.

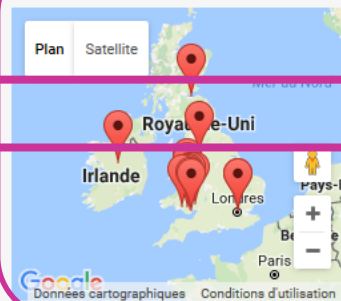
The move in Scotland came after a frozen beefburger from a school kitchen in North Lanarkshire tested positive for horse DNA while in Wales it was discovered that some burgers delivered to schools had been made at the Burger Manufacturing Company (BMC), in Builth Wells, Powys, one of the most recent producers to be caught up in the growing horsemeat scandal.

The developments came as Birds Eye withdrew three beef ready-meals from sale in the UK and Ireland as a precaution after 2% horse DNA was found in its chilli con carne made for the Belgian market.

Local authorities in Scotland were advised to "place a hold" on the use of the products following the discovery in a burger at a North Lanarkshire school kitchen.

The measure also applies to council leisure facilities and some social care establishments.

Where



Who

- Birds Eye (5)
- Richard Lochhead (1)
- Food Standards Agency (2)

What

- Scotland (4)
- North Lanarkshire (4)
- Wales (4)
- United Kingdom (1)
- Ireland (1)
- Monmouthshire (1)
- Blaenau Gwent (2)
- Merthyr Tydfil (1)
- Rhondda Cynon Taf (1)
- Caerphilly (2)
- Powys (2)
- Neath Port Talbot (1)
- England (2)
- Lancashire (1)
- Iglo (1)



```
<span rel="dc:subject"
resource="http://dbpedia.org/resource/Hamburger">
beefburgers</span>
```

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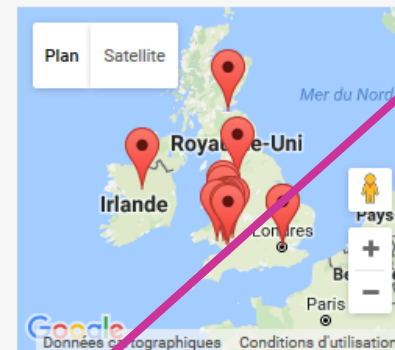
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- [England](#) (2)
- [Lancashire](#) (1)
- [Iglo](#) (1)

Hamburger



A hamburger (also called a beef burger, sandwich, burger, hamburger or cheeseburger when served with a slice of cheese) is a sandwich consisting of one or

more cooked patties of ground meat, usually beef, placed inside a sliced bun. Hamburgers may be cooked in a variety of ways, including pan-frying, barbecuing, and flame-broiling. Hamburgers are often served with lettuce, bacon, tomato, onion, pickles, cheese and condiments such as mustard, mayonnaise, ketchup, relish, and chiles. The term "burger" can also be applied to the meat patty on its own, especially in the UK where the term "patty" is rarely used. The term may be prefixed with the type of meat or meat substitute used, as in "turkey burger", "bison burger", or "veggie burger". Hamburgers are sold at fast-food restaurants, diners, specialty restaurants (where burgers may sell for several times the cost of a burger) and high-end restaurants. There are many international and regional variations of the hamburger.

See [Wikipedia page](#)
See [DBpedia page](#)

About: Hamburger

An Entity of Type : [Plat principal](#), from Named Graph : <http://dbpedia.org>, within Data Space : [dbpedia.org](#)

Un hamburger, parfois hambourgeois (au Canada francophone) ou par aphérèse burger, est un sandwich d'origine allemande, composé de deux pains de forme ronde (bun) garnis de viande hachée (souvent du bœuf) et généralement de crudités — salade, tomate, oignon, cornichon (pickles) —, de fromage et de sauce. C'est un plat typique de la restauration rapide, emblématique de la cuisine américaine.

Property	Value
dbo:abstract	<ul style="list-style-type: none">Un hamburger, parfois hambourgeois (au Canada francophone) ou par aphérèse burger, est un sandwich d'origine allemande, composé de deux pains de forme ronde (bun) garnis de viande hachée (souvent du bœuf) et généralement de crudités — salade, tomate, oignon, cornichon (pickles) —, de fromage et de sauce. C'est un plat typique de la restauration rapide, emblématique de la cuisine américaine. (fr)A hamburger (also called a beef burger, sandwich, burger, hamburg or cheeseburger when served with a slice of cheese) is a sandwich consisting of one or more cooked patties of ground meat, usually beef, placed inside a sliced bun. Hamburgers may be cooked in a variety of ways, including pan-frying, barbecuing, and flame-broiling. Hamburgers are often served with lettuce, bacon, tomato, onion, pickles, cheese and condiments such as mustard, mayonnaise, ketchup, relish, and chiles. The term "burger" can also be applied to the meat patty on its own, especially in the UK where the term "patty" is rarely used. The term may be prefixed with the type of meat or meat substitute used, as in "turkey burger", "bison burger", or "veggie burger". Hamburgers are sold at fast-food restaurants, diners, specialty restaurants (where burgers may sell for several times the cost of a burger) and high-end restaurants. There are many international and regional variations of the hamburger. (en)
dbo:country	<ul style="list-style-type: none">dbr:Germanydbr:United_States
dbo:ingredient	<ul style="list-style-type: none">dbr:Meatdbr:Bread

definitions

■ Knowledge Graph

- Knowledge base used by Google to improve information retrieval
- Includes other knowledge bases like FreeBase and DbPedia
- Any graph-based representation where nodes and edges are symbolic data
- <https://arxiv.org/abs/2003.02320> « knowledge graphs » (survey)

■ Knowledge vault

- Knowledge base approach for information retrieval
- Data integration from the knowledge graph, user's queries, information extracted from news

■ Semantic annotation

- Add « semantic » representations to documents as meta-data or tags
- Requires a formal vocabulary or an ontology

HTML pages with structured data

- Approche générale google
 - <https://developers.google.com/search/docs/guides/intro-structured-data>
- Démonstrateur de <http://labs.sparna.fr/schema.org/apres/index.html> !
- Un outil pour extraire les données structurées à partir de pages web ;
<https://search.google.com/structured-data/testing-tool>

Example 3: Question answering on the web

The screenshot shows the ESWC 2006 website. At the top, the header includes the ESWC 2006 logo, the location 'Budva, Montenegro' and dates '11 - 14 June 2006', and the 'European Semantic Systems Initiative' logo. Below the header is a blue banner with '3rd European Semantic Web Conference 2006'. A 'NEWS:' section is visible on the left. A navigation menu on the left lists: Home, News, Important Dates, Conference Programme, Technologies, Ontology, Registration, Organising Committee, Programme Committee, Invited Speakers, Industry Forum, Accepted Papers, Workshops, Tutorials, and Call for Papers [closed]. The main content area features a 'Welcome to ESWC 2006!' message with 'RDF' and 'META' links. A pink box highlights the 'About the Conference' section, which states: 'The 3rd Annual European Semantic Web Conference will be held in Budva, Montenegro from the 11th - 14th June, 2006. It will present the latest results in research and application in Semantic Web technologies (including knowledge markup languages, Semantic Web services, ontology management and more). ESWC 2006 will also feature a special industry-oriented event providing European industry with an opportunity to become even more familiar with these technologies. It will offer a tutorial program, focusing on the latest in Semantic Web technologies.' Below this, it mentions co-location with the Knowledge Web network and sponsorship by ESSI (formerly SDK) and other projects like SEKT, DIP, Knowledge Web, and ASG. A cloud-shaped callout on the right asks 'Where did ESWC 2006 take place?'. On the right side, there are logos for 'ASG', 'knowledgeweb', and 'luisa'. At the bottom right, there is a 'Lecture Notes in Computer Science' logo and a play button icon.

ESWC 2006 Budva, Montenegro 11 - 14 June 2006
European Semantic Systems Initiative

3rd European Semantic Web Conference 2006

NEWS:

- Home
- News
- Important Dates
- Conference Programme
- Technologies
- Ontology
- Registration
- Organising Committee
- Programme Committee
- Invited Speakers
- Industry Forum
- Accepted Papers
- Workshops
- Tutorials
- Call for Papers [closed]

Welcome to ESWC 2006! [RDF](#) [META](#)

About the Conference

The 3rd Annual European Semantic Web Conference will be held in Budva, Montenegro from the 11th - 14th June, 2006. It will present the latest results in research and application in Semantic Web technologies (including knowledge markup languages, Semantic Web services, ontology management and more).

ESWC 2006 will also feature a special industry-oriented event providing European industry with an opportunity to become even more familiar with these technologies. It will offer a tutorial program, focusing on the latest in Semantic Web technologies.

ESWC 2006 is co-located with a meeting of the Knowledge Web network of excellence. Workshops and meetings of other European Commission 6th Framework Programme projects involved in the Semantic Web and Semantic Web technologies will be able to showcase their developments. ESWC 2006 is sponsored by ESSI (formerly SDK), a group of four European Commission 6th Framework Programme projects known as SEKT, DIP, Knowledge Web and ASG. Collectively these projects aim to improve world-wide research and standardisation in the areas of the Semantic Web and Semantic Web Systems.

ESWC2006 Proceedings - LNCS 4011 are now available!

Lecture Notes in Computer Science
LNCS LNAI LNRI

Where did ESWC 2006 take place?

ASG

knowledgeweb

luisa
Learning content management system Using Innovative Semantic web services Architecture

Play button icon

Example 3: Question answering on the web

How search engines index the page

3rd European Semantic Web Conference (ESWC2006)

The 3rd Annual European Semantic Web Conference (ESWC2006) will be held in Budva, Montenegro from the 11th - 14th June, 2006.

It will present the latest results in research and application in Semantic Web technologies (including knowledge markup languages, Semantic Web services, ontology management and more).

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Example 3: Question answering on the web

How do search engines index pages?

Europe
Semanti
Web
Confere
Annual
Europe
Semanti
Web
Confere
Budva
Montene
present
results
Researc
Applica
Semanti
Web

Technol
Includi
Knowled
Markup
Languag
Semanti
Web
Service
Ontolog
managem
Feature
Special
Industr
Oriente
event

...

European [geographic area:Europe]
Semantic
Web [semantic Web]
Conference [conference]
Annual
European [geographic area:Europe]
Semantic
Web
Conference [conference]
Budva [City:Budva]
Montene [geographic
area:Montenegro]
present [to present]
results [result]
Research [research]
Application [application]

Semantic
Web [semantic Web]
Technology [technology]
Including [to include]
Knowledge [knowledge]
Markup
Language [Markup Language]
Semantic
Web [semantic Web]
Service
Ontology [Ontology]
management [management]
Feature [to feature]
Special
Industrial [industrial]
Oriented
Event [event]

...

Example 3: Question answering on the web

Semantic annotation

```
<?xml version='1.0' encoding='ISO-8859-1'?>
```

```
<rdf:RDF
```

```
<eswc:ConferenceEvent rdf:about="http://www.eswc2006.org/#">
```

```
  <dc:title>3rd European Semantic Web Conference (ESWC2006)</dc:title>
```

```
  <dc:description>The 3rd Annual European Semantic Web Conference (ESWC2006) will be held in Budva,
```

```
  <eswc:hasLocation rdf:resource="http://www.eswc2006.org/places/#Maestral" />
```

```
  <eswc:hasStartDateTime>2006-06-11T09:00:00+02:00</eswc:hasStartDateTime>
```

```
  <eswc:hasEndDateTime>2006-06-14T17:45:00+02:00</eswc:hasEndDateTime>
```

```
  <eswc:hasProgramme rdf:resource="http://www.eswc2006.org/conference_programme.html" />
```

```
  <eswc:hasProceedings rdf:resource="http://www.springer.com/uk/home/computer/database?SGWID=3-40109-22-173660166-0"
```

```
  <eswc:hasProgramme rdf:resource="http://www.eswc2006.org/conference_programme.html" />
```

```
  <eswc:hasProceedings rdf:resource="http://www.springer.com/uk/home/computer/database?SGWID=3-40109-22-173660166-0" />
```

```
</rdf:RDF>
```

```
<eswc:hasCall rdf:resource="" />
```


```
preferably add roles here
```

```
<eswc:hasRole rdf:resource="" />
```

```
-->
```



ESWC 2016



13th ESWC 2016

ESWC2016CALLS & DATESPROGRAMVENUESUMMER SCHOOLSPONSORSHIP



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ESWC 2016 - NEWS

ESWC 2016 - urgent news

Posted on Mon, May 30th 2016

Workshops & Tutorials on Monday, June 30, 2016 are supposed to start at 9:00am. The printed program indicates a wrong **start time with 9:30am**. Sorry for the inconvenience!

We hope you enjoy ESWC 2016!

Tweets by @eswc_conf

Share news on: 

Proceedings

Knowledge bases

- DBpedia <http://dbpedia.org/>

- Wikipedia categories as resources
- Wikipedia infoboxes to add properties to these resources
- 1 version for each language



- Yago

- Includes WordNet, DBpedia ...
- Knowledge extracted from définitions in the Wictionnary etc.





hamburger, burger, hambourgeois

Un hamburger, parfois hambourgeois ou par aphérèse burger, est un sandwich composé de deux pains de forme ronde garnis de viande hachée et généralement de crudités — salade, tomate, oignon, cornichon —, de

ID: 00009566n | Concept



Steak Salisbury, hamburger, hambourgeois

Le steak Salisbury est un plat composé de bœuf haché et d'autres ingrédients, modelés en forme de steak, généralement assorti d'une sauce brune.

ID: 00068946n | Concept



Steak haché, boulette, hamburger

Un steak haché est une viande hachée, souvent conditionnée en forme de galette prête à la cuisson.

ID: 00014608n | Concept



hamburger, bœuf haché

EN Beef that has been ground

Semantic web - 1

Example 4: BBC – a “real application”

NATURE WILDLIFE


Home | News | Features | Video collections | **Wildlife** | Prehistoric life | Places | Contact

Life | Animals | Mammals | Kangaroos and wallabies

Kangaroos and wallabies


This family of marsupials includes the kangaroos, tree kangaroos, wallabies and quokkas. When they need to move quickly, they adopt a bipedal hopping gait and use their tail for balance.

Scientific name: Macropodidae
Rank: Family
Common names: Macropods



10 Theo Allo/Getty Images

Distribution



The shading illustrates the diversity of this group – the darker the colour the greater the number of species. Data provided by WWF's Wildfinder.

Classification

- Life
- Animals
- Vertebrates
- Mammals
- Kangaroos, possums and wallabies
- Kangaroos and wallabies

Share | Facebook | Twitter

Find wildlife

Search

BBC News about Kangaroos and wallabies

How the kangaroo got its bounce


The newly sequenced DNA of the kangaroo reveals some of the genetic secrets behind its remarkable biology.

- Kangaroo bounce mechanics snapped
- Australia's marsupials 'have American roots'
- Kidnap a joey to save a species

Elsewhere on the web

- Animal Diversity Web (animaldiversity.umnz.umnich.edu)
- Macropod fact sheet (bird.net.au)
- Fascinating facts about macropods (rootourism.com)
- Introduction to macropods (zipcodezoo.com)
- Macropod (wikipedia.org)

Explore this group



Tree-Kangaroos | Kangaroos, wallabies and wallaroos | Rock wallabies

Situation in a taxonomy

Close and similar animals

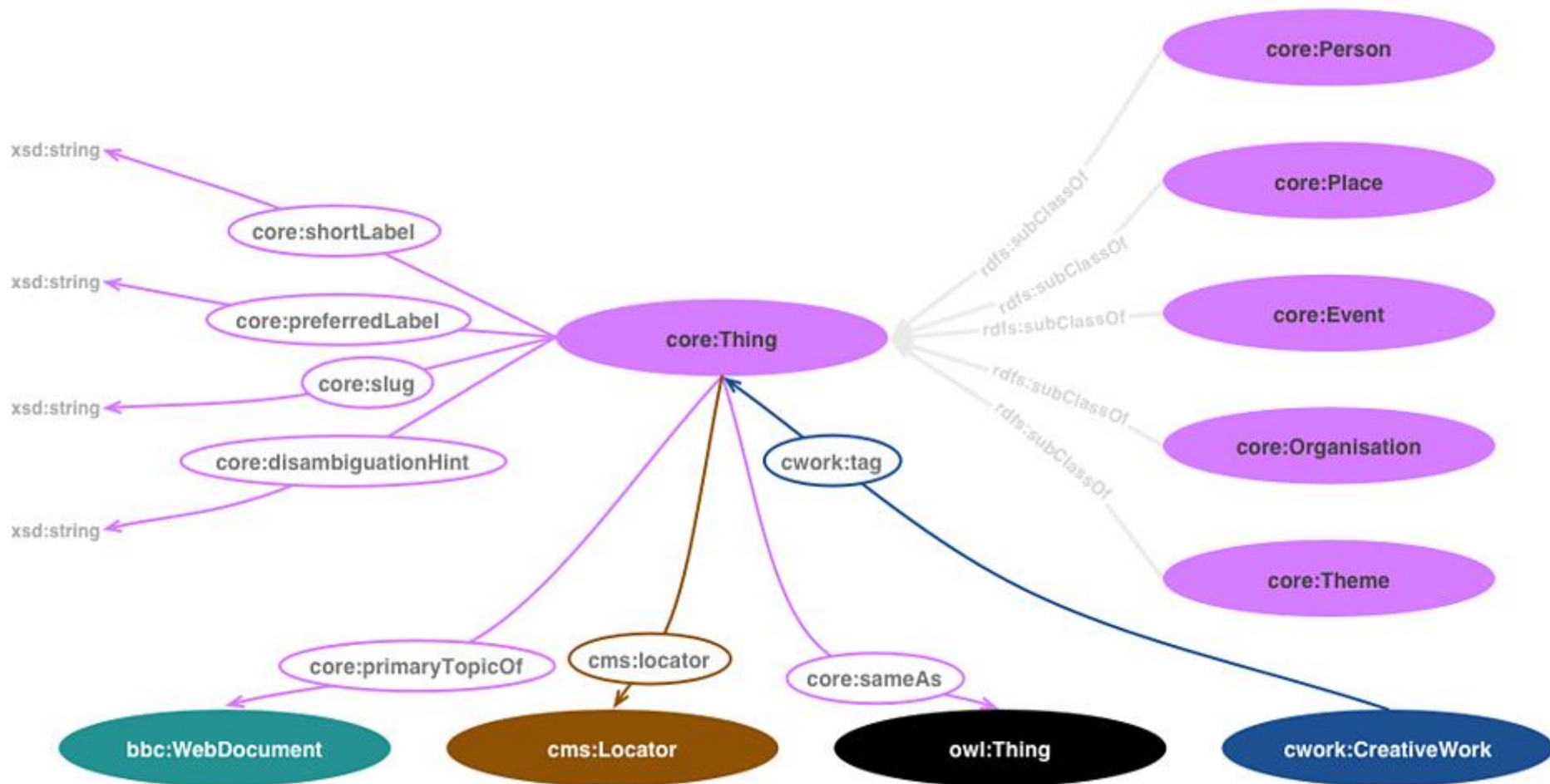
Additional informations

Example 4: BBC – “real ontologies”

- Ontologies and vocabularies for
 - Tagging videos and papers
 - Collecting additional information on the web
 - Providing synthetic information about wildlife, sports, news, etc.
- Ontologies
 - 12 main ontologies
 - wildlife ontology
 - reuses 6 ontologies

<http://www.bbc.co.uk/ontologies/wildlife/2010-11-04.shtml>

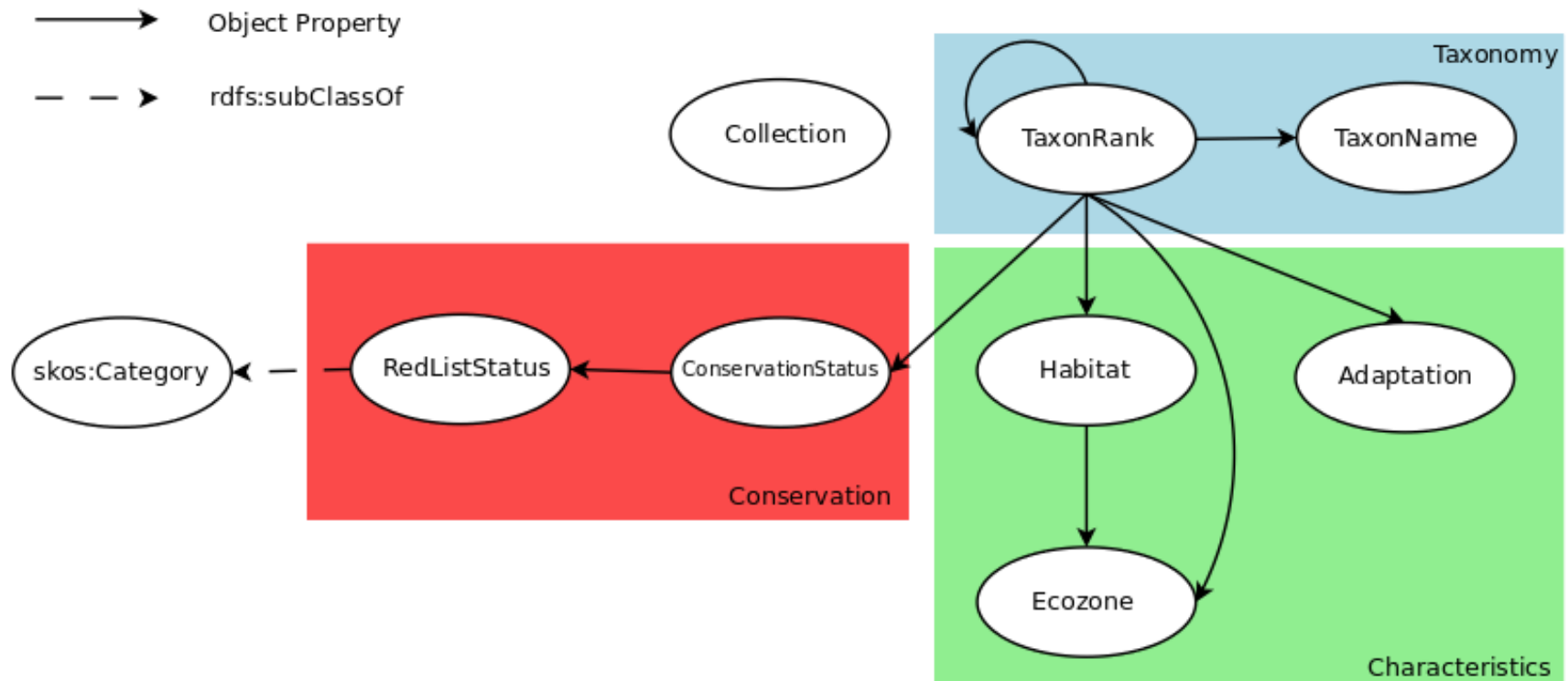
Ex 4 : BBC Core Concepts Ontology



Ex 4: BBC wild life ontology

Vocabulary Diagram

The following diagram illustrates the relationships between the key classes in the ontology. A number of classes of TaxonRank, Habitat and Adaptation have been omitted for clarity.



New needs

- Data are not just web pages ...
- ... but also
 - Data collected from data bases, repositories
 - Meta-data, multi-media documents
 - Lexical ressources, terminologies, thesaurus ...
- ... and also
 - Cookies, data collected from the social web
 - Open data from governments, scientific groups...
 - Data flows produce in real time

Internet of things

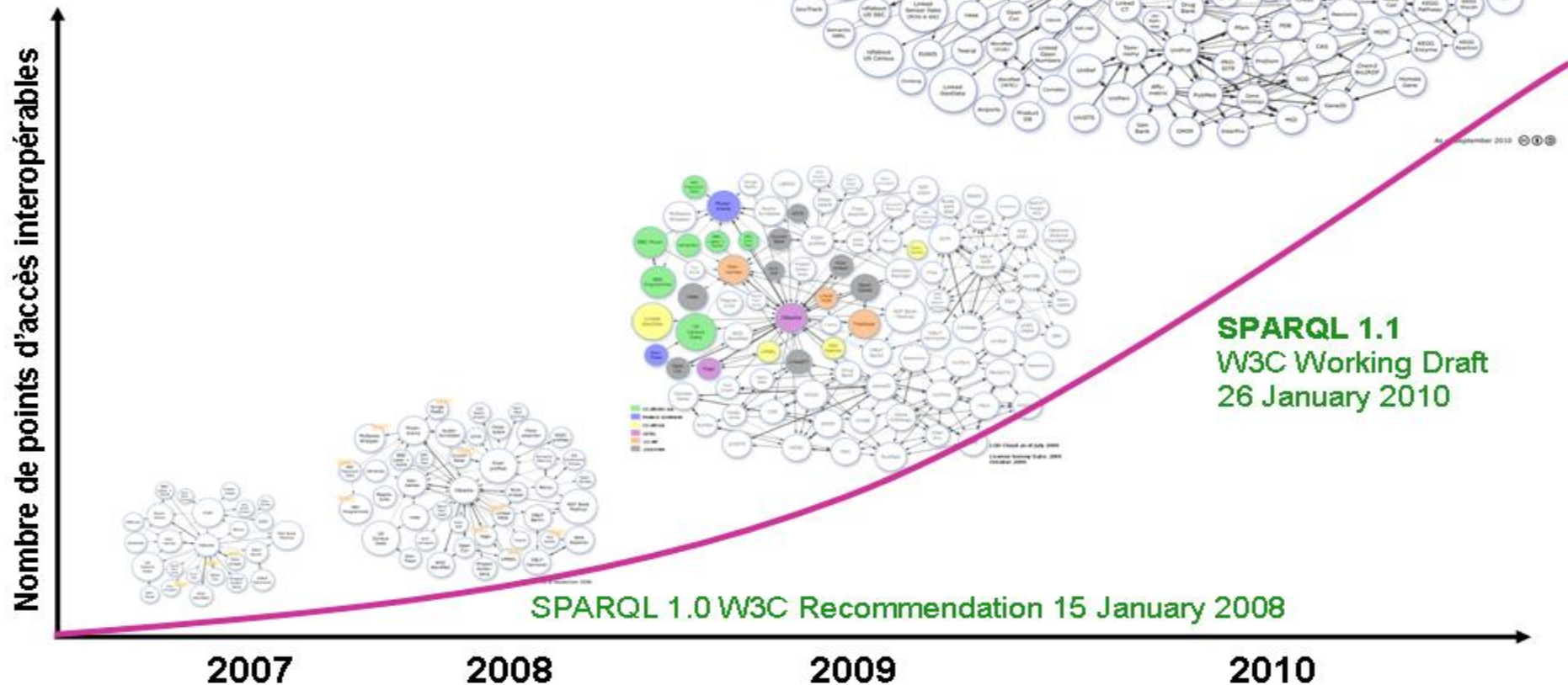


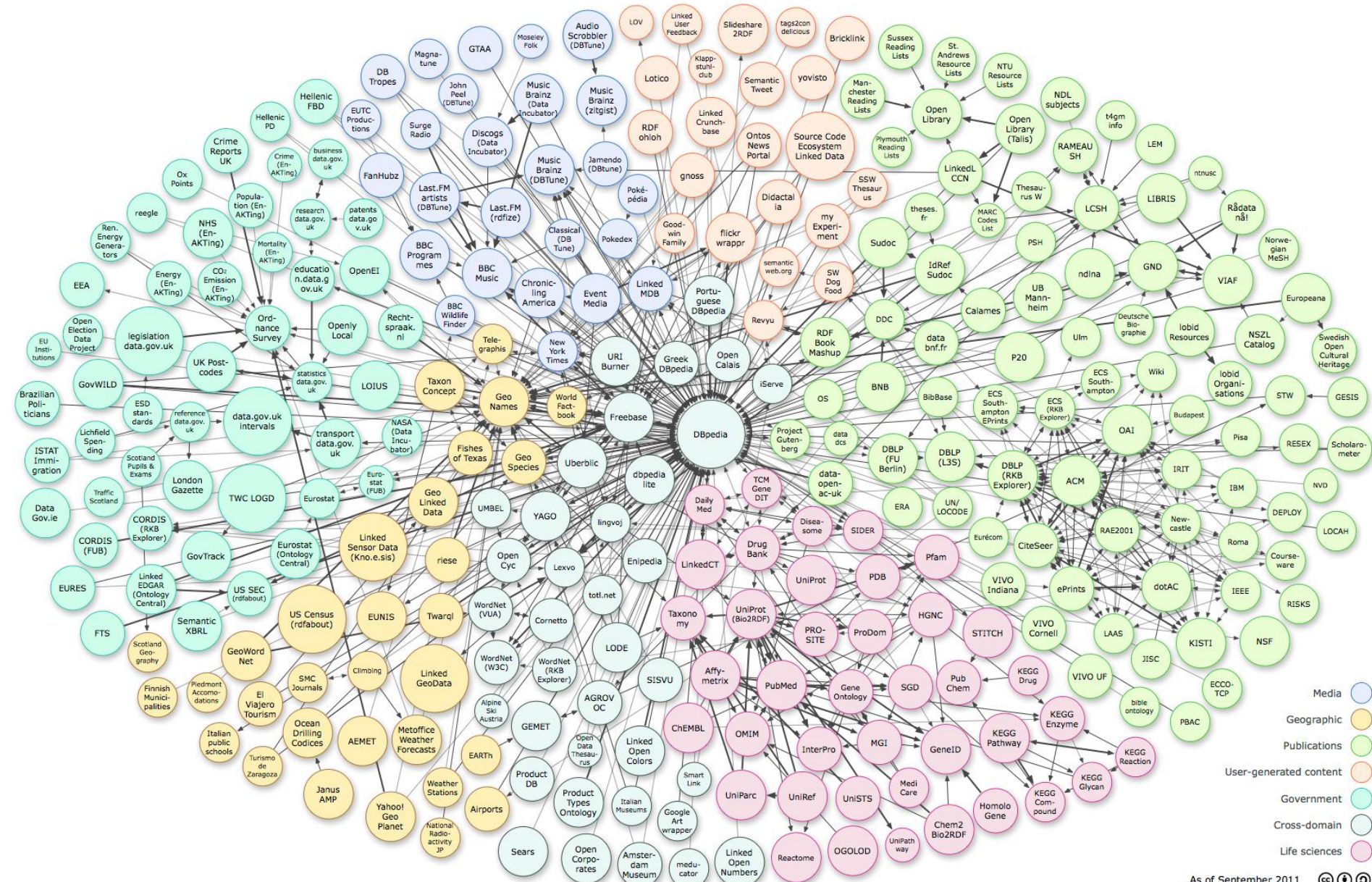
- Connecting sensors and any object with and RFID cheap
- *objets ayant des identités et des personnalités virtuelles, opérant dans des espaces intelligents et utilisant des interfaces intelligentes pour se connecter et communiquer au sein de contextes d'usages variés*
- Objects are identified with URIs
- Standardization of information exchange format
- Store and exploit context

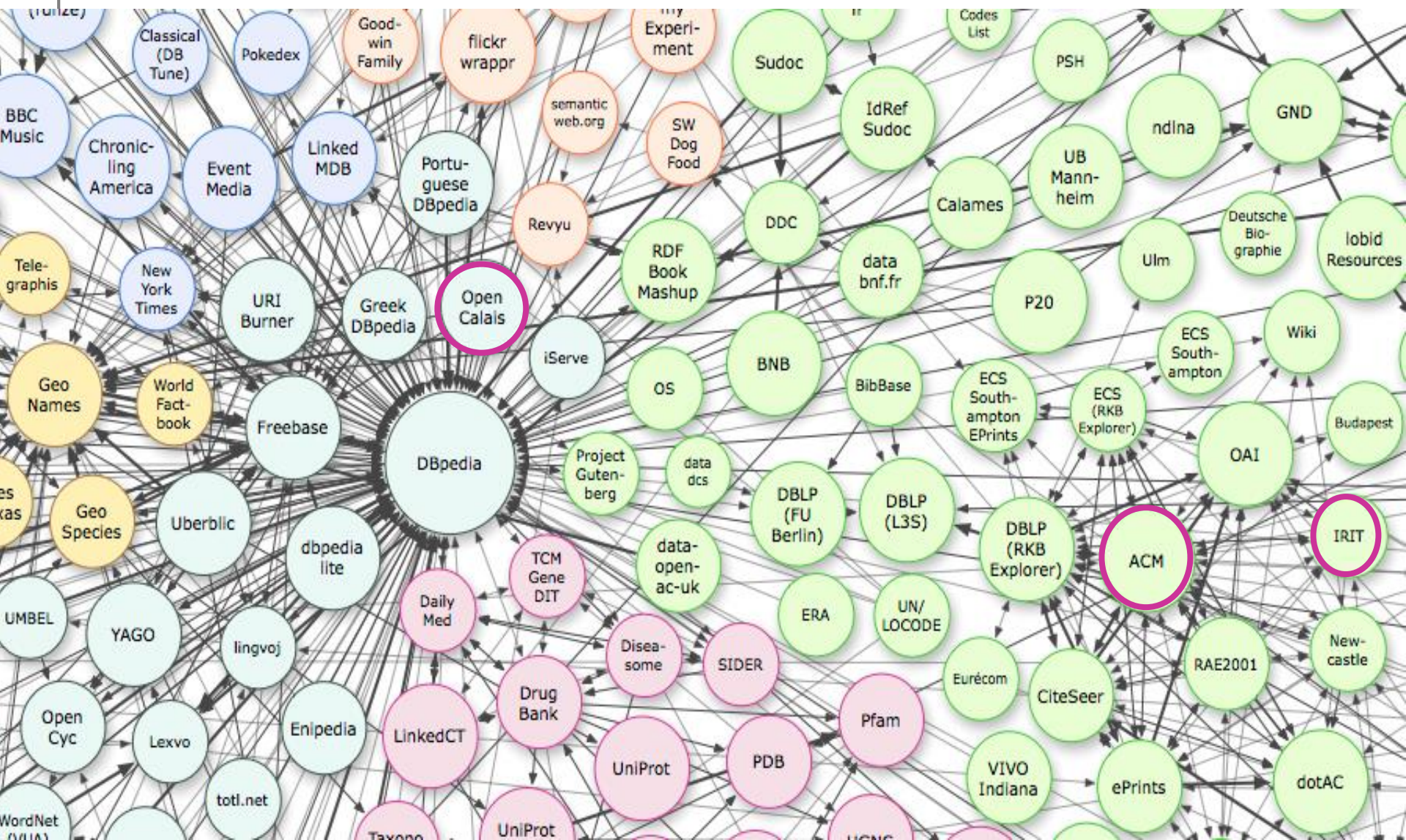
New needs

■ More and more data

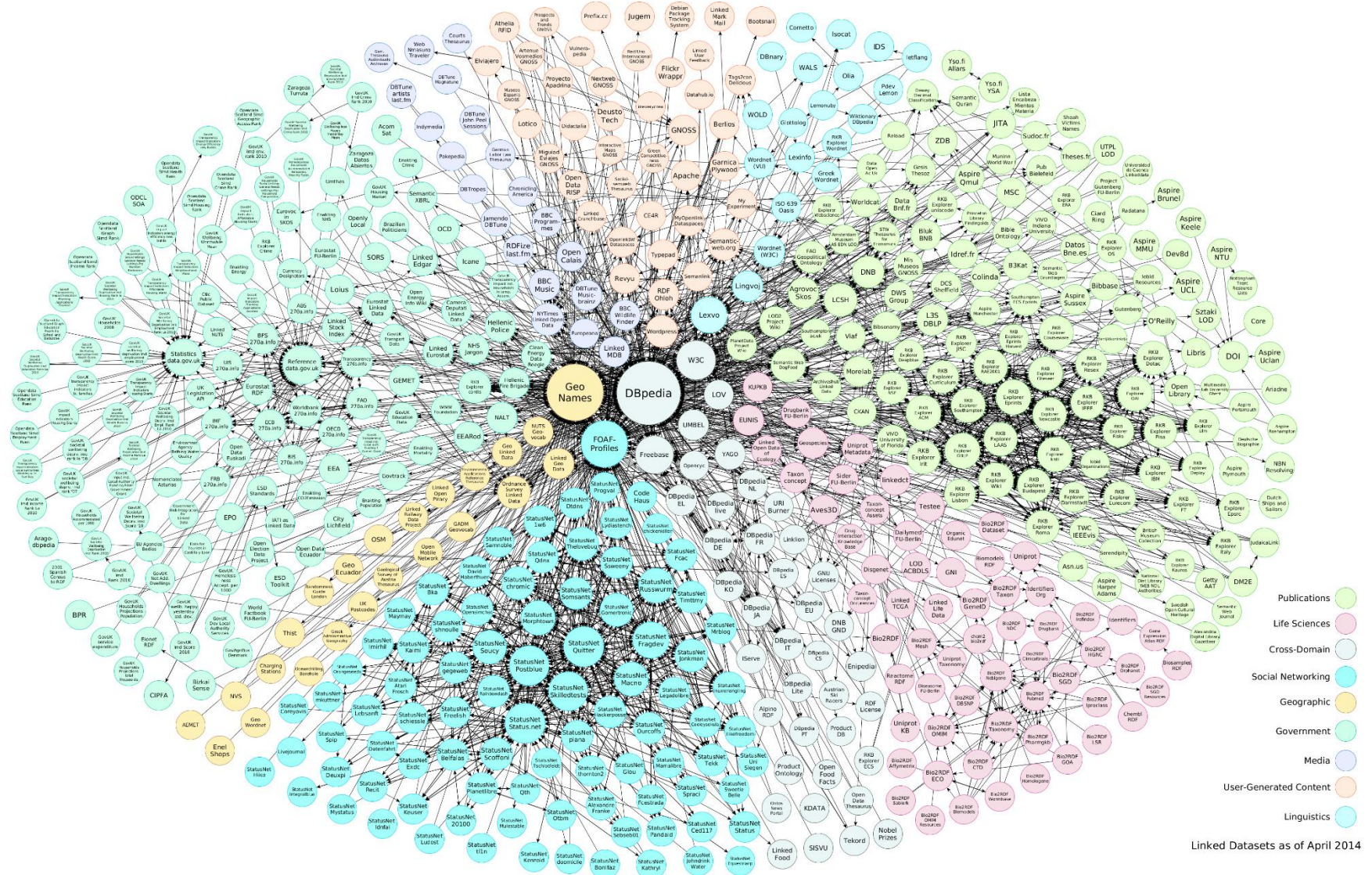
http://fr.wikipedia.org/wiki/Tim_Berners_Lee







<http://data.dws.informatik.uni-mannheim.de/lodcloud/2014/LinkedOpenDataCloud2014.png>



LOD 2020

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