

OpenGeoData

Presentation available at <https://github.com/nobohan/OpenGeoData>

FabSpace 10 October 2017 - Liège

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 - Robin Wilson's list
 - Opendata.stackoverflow.com

Qu'est-ce qu'OpenStreetMap ?



Base de données cartographiques collaborative et libre

Projet mondial

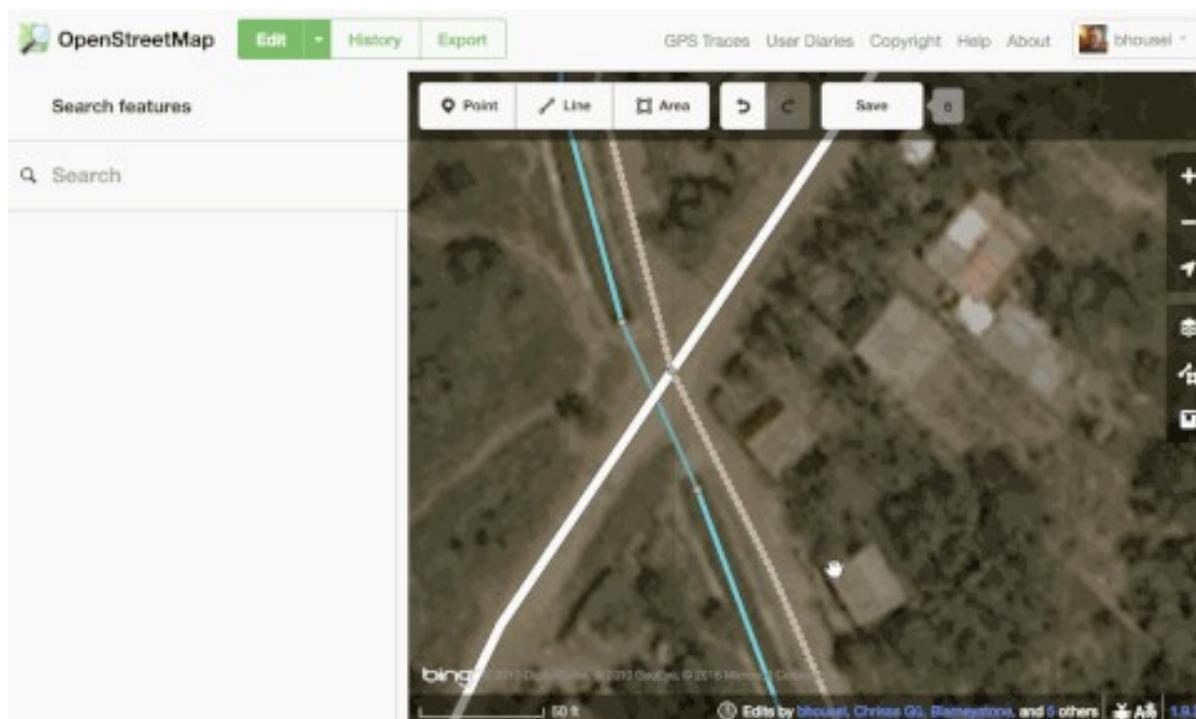
OpenStreetMap = Wikipedia de la carte

Ce n'est pas juste une carte !

Qu'est-ce qu'OpenStreetMap ?

Démo : faire une modification

Il suffit de s'inscrire pour commencer à modifier OpenStreetMap



Qu'est-ce qu'OpenStreetMap ?

Contributeurs & communauté

Outils de coordination

- Wiki
- Mailing-listes
- Vote

Organisations

- OSM Foundation
- Local chapters → OSM.be
- Humanitarian OSM Team (HOT)

Écosystème OSM (Amont)

Outils d'édition

- iD Editor
- JOSM
- Potlatch
- Maps.me
- Vespucci

Qualité des données

- OSM Inspector
- Osmose
- keepright.at
- ...



From (c) Julien Fastré, CC BY-SA, mars 2013

Qu'est-ce qu'OpenStreetMap ?

Écosystème OSM (Aval):

Services d'itinéraires

- OSRM
- MapZen
- GraphHopper

Mobile Apps

- OSMAnd
- Maps.me
- ...

Pédestre/Randonnée:

- [hikebikemap](#)
- [www.wanderreitkarte.de](#)
- [hiking.waymarkedtrails.org](#)
- [www.opencyclemap.org](#)



Écosystème OSM (Aval)

Cartes dérivées

- Des milliers de cartes thématiques: Liste [ici](#)
- [www.itoworld.com/map/main](#)
- [Opentopomap](#)
- ...

Entreprises

- Geofabrik
- ITO
- MapBox
- ChampsLibres

From (c) Julien Fastré, CC BY-SA, mars 2013

Qu'est-ce qu'OpenStreetMap ?

Qu'est-ce qu'une donnée dans OpenStreetMap?

- BD OSM = Base de données vectorielles
- OSM est contenu dans le fichier planet.osm (803 Go en juin 2017)
- nodes (points), ways (lignes) et relations



Le modèle OSM

Qu'est-ce qu'une donnée dans OpenStreetMap?

- Exemple: un bar:

```
amenity = pub  
name = Delirium Cafe  
website = http://www.deliriumcafe.be/  
brewery = Rulles estivale;Witkap Pater Stimulo;Viven IPA  
description = Beer bar  
smoking = outside  
wheelchair = no  
addr:city = Bruxelles - Brussel  
addr:postcode = 1000  
addr:street = Impasse de la Fidélité – Getrouwheidsgang  
addr:housenumber = 4  
opening_hours = ...  
...
```



- Le réflexe: le wiki (**Map Features**)

Le modèle OSM

Qu'est-ce qu'une donnée dans OpenStreetMap?

- Exemple: une prairie:

landuse = meadow

meadow = agricultural

animal = yes

barrier = fence

...

- Superposition possible d'éléments: frontières administrative, land-use, land-cover, point d'intérêts, lieux-dits, description d'éléments naturels, éléments artificiels, etc.
- OSM est une base de données généralistes d'information géographique

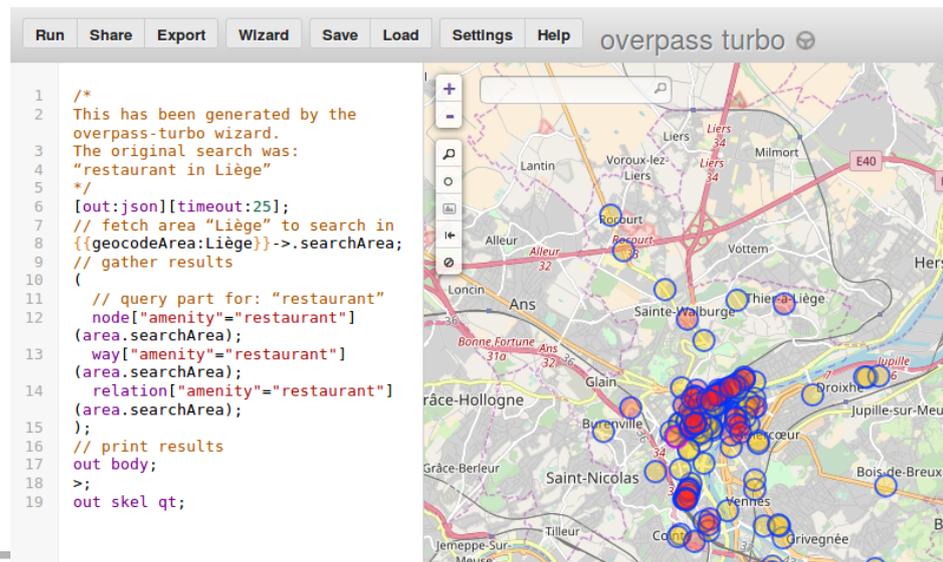


Jardiner les données OSM

Une API de lecture de la base de données OSM existe sous le nom barbare de:



qui est implémentée sous overpass-turbo.eu

A screenshot of the Overpass Turbo web application. The interface is split into two main sections. On the left, there is a code editor with a light background and dark text, showing a JSON query for finding restaurants in Liège. The code includes comments in French and standard JSON query syntax. On the right, there is a map of the Liège region with numerous blue circular markers indicating the locations of restaurants. The map includes labels for various towns and roads. At the top of the interface, there is a navigation bar with buttons for 'Run', 'Share', 'Export', 'Wizard', 'Save', 'Load', 'Settings', and 'Help', along with the text 'overpass turbo'.

Jardiner les données OSM

Ex. Liste de toutes les pizzeria de Bruxelles?

Query Wizard

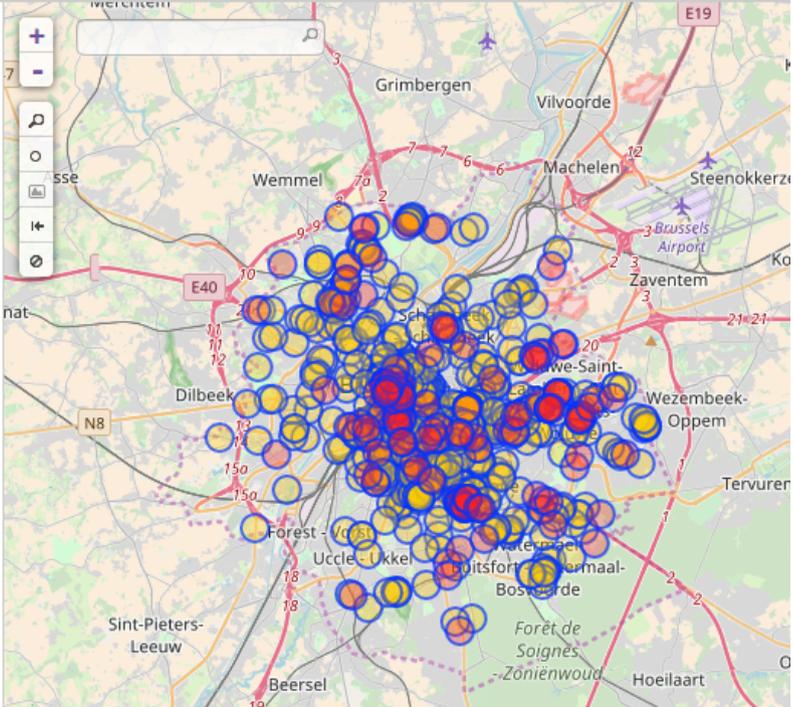
The **wizard** assists you with creating Overpass queries. Here are some usage examples:

- Drinking Water
- highway=* and type:way
- tourism=museum in Vienna

829 restaurants

build query build and run query ca

```
1  /*
2  This has been generated by the
3  overpass-turbo wizard.
4  The original search was:
5  "restaurant in Bruxelles-Capitale"
6  */
7  [out:json][timeout:25];
8  // fetch area "Bruxelles-Capitale"
9  // to search in
10 {{geocodeArea:Bruxelles-Capitale}}->.searchArea;
11 // gather results
12 (
13   // query part for: "restaurant"
14   node["amenity"="restaurant"]
15   (area.searchArea);
16   way["amenity"="restaurant"]
17   (area.searchArea);
18   relation["amenity"="restaurant"]
19   (area.searchArea);
20 );
21 // print results
22 out body;
23 >;
24 out skel qt;
```



overpass turbo

Jardiner les données OSM

Ex. Liste de toutes les pizzeria de Bruxelles

```
[out:json][timeout:25];
{{geocodeArea:Bruxelles-
Capitale}}->.Bxl;
(
  node["amenity"="restaurant"]
["cuisine"="pizza"](area.Bxl);
  way["amenity"="restaurant"]
["cuisine"="pizza"](area.Bxl);
);
out body;
>;
out skel qt;
```

31 pizzeria ?!

```
[out:json][timeout:25];
{{geocodeArea:Bruxelles-
Capitale}}->.Bxl;
(
  node["amenity"="restaurant"]
(area.Bxl);
  way["amenity"="restaurant"]
(area.Bxl);
)->.resto;

(
way.resto["cuisine"="pizza"];
node.resto["cuisine"="pizza"];
way.resto["cuisine"="italian"];
node.resto["cuisine"="italian"];
);

out body;
>;
out skel qt;
```

122 pizzeria (ou restaurants italiens...)

```
[out:json][timeout:25];
{{geocodeArea:Bruxelles-
Capitale}}->.Bxl;
(
  node["amenity"="restaurant"]
(area.Bxl);
  way["amenity"="restaurant"]
(area.Bxl);
)->.resto;

(
way.resto["cuisine"="pizza"];
node.resto["cuisine"="pizza"];
way.resto["cuisine"="italian"];
node.resto["cuisine"="italian"];
way.resto["name"~"Pizz"];
node.resto["name"~"Pizz"];
);

out body;
>;
out skel qt;
```

128 pizzeria ou restaurants italien !

Jardiner les données OSM

Ex. Liste de toutes les pizzeria de Bruxelles

```
[out:json][timeout:25];
{{geocodeArea:Bruxelles-
Capitale}}->.Bxl;
(
  node["amenity"="restaurant"]
(area.Bxl);
  way["amenity"="restaurant"]
(area.Bxl);
  node["amenity"="fast_food"]
(area.Bxl);
  way["amenity"="fast_food"]
(area.Bxl);
)->.resto;

(
way.resto["cuisine"="pizza"];
node.resto["cuisine"="pizza"];
way.resto["cuisine"="italian"];
node.resto["cuisine"="italian"];
way.resto["name"~"Pizz"];
node.resto["name"~"Pizz"];
);

out body;
>;
out skel qt;
```

→ 152 endroits où il y a de fortes chances qu'on serve des pizzas.

Jardiner les données OSM

Aller plus loin:

- https://framagit.org/champs-libres/udos_atelier_overpass_api
- https://wiki.openstreetmap.org/wiki/Overpass_API/Overpass_API_by_Example

D'autres sources de données



- Base de données de noms de lieux
- > 10 millions noms de lieux
- Geocoding & reverse-geocoding
- Différent services, ex: FindNearby.

<http://api.geonames.org/findNearbyJSON?lat=49.6842&lng=5.8143&radius=10&username=demo>

D'autres sources de données

- Nominatim
- Comme Geonames, mais dérivé d'OSM
- <https://nominatim.openstreetmap.org/>

D'autres sources de données



The free and open global address collection

[Learn more](#) ▼

D'autres sources de données



Product ▾

Resources ▾

Blog

Street-level imagery for the future of maps

Images from anyone with a camera, combined to generate map data

Create account

Explore places

199,819,369 images, 3,461,474,607 meters



D'autres sources de données



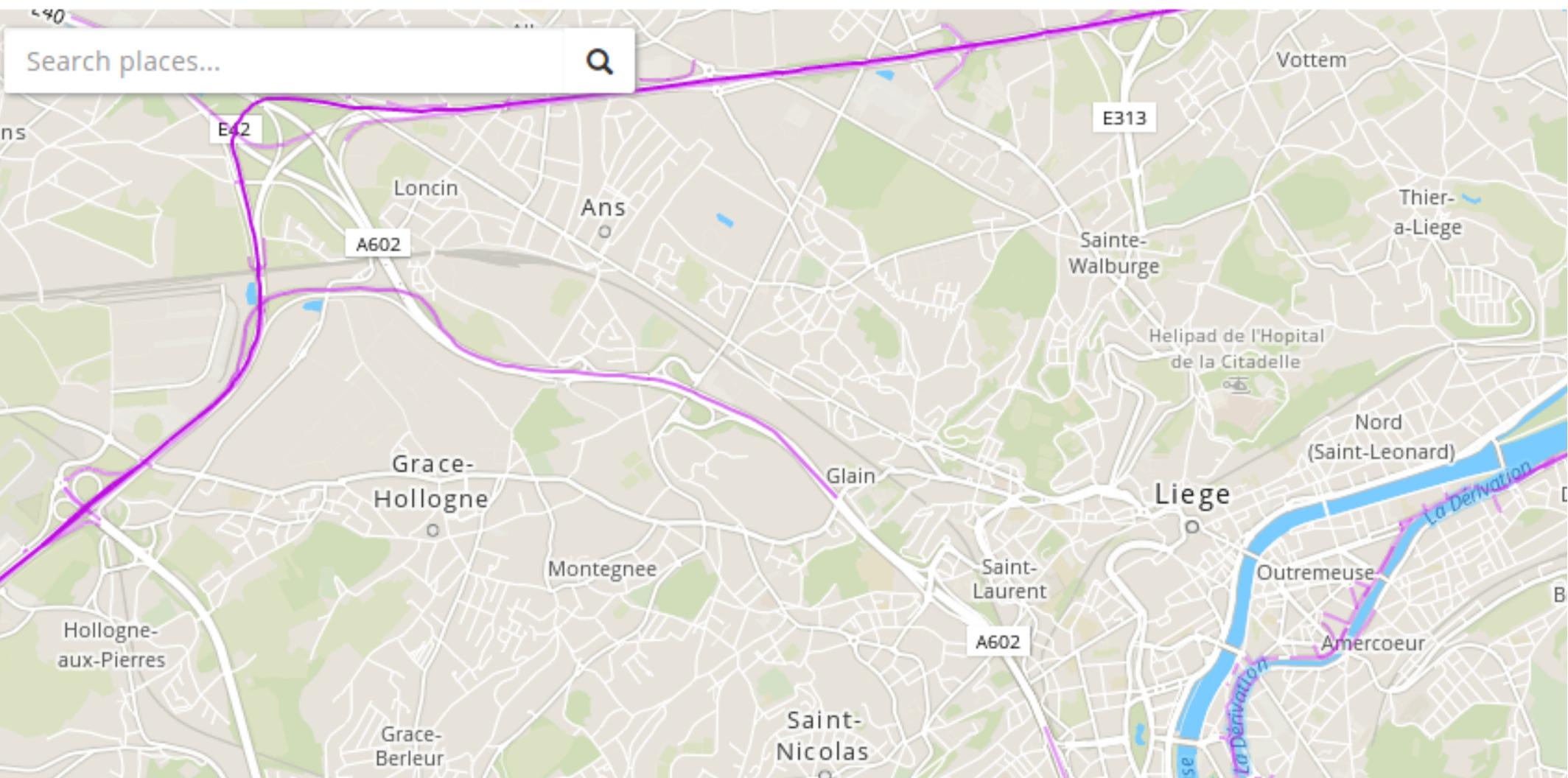
OpenStreetCam

[Leaderboard](#)

[Get the App](#)

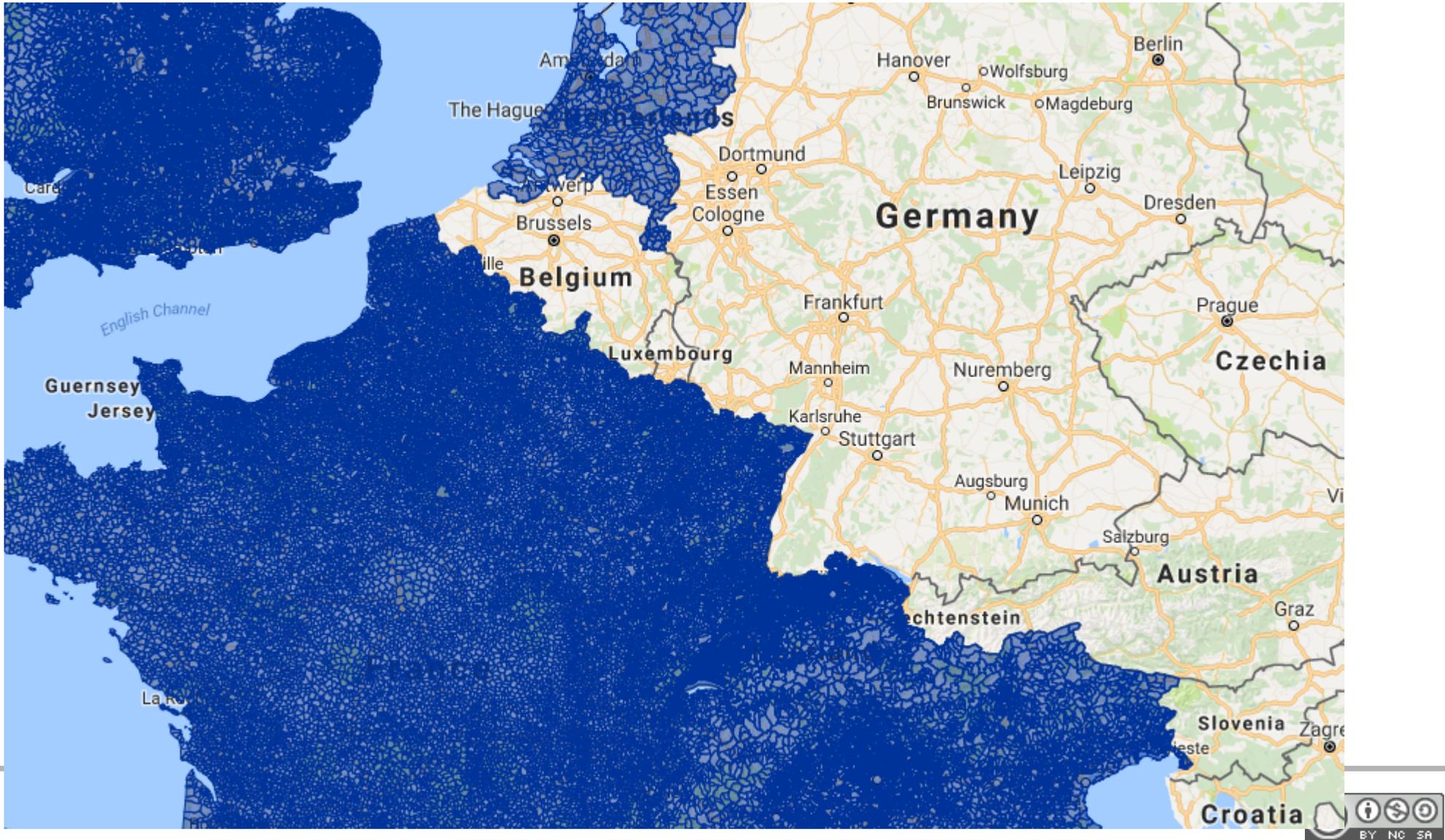
[Blog](#)

[Beta](#)



D'autres sources de données

Quattroshapes



D'autres sources de données



- API de Wikipedia
- Requêtes géospatiales

```
# Airports within 100km from Berlin
#defaultView:Map
SELECT ?place ?placeLabel ?location ?dist WHERE {
  # Berlin coordinates
  wd:Q64 wdt:P625 ?berlinLoc .
  SERVICE wikibase:around {
    ?place wdt:P625 ?location .
    bd:serviceParam wikibase:center ?berlinLoc .
    bd:serviceParam wikibase:radius "100" .
    bd:serviceParam wikibase:distance ?dist.
  }
  # Is an airport
  ?place wdt:P31/wdt:P279* wd:Q1248784 .
  SERVICE wikibase:label {
    bd:serviceParam wikibase:language "en" .
  }
} ORDER BY ASC(?dist)
```

D'autres sources de données



- <http://www.naturalearthdata.com/>
- Free raster and vector GIS database

D'autres sources de données

Robin Wilson's list of > 300 ready-to-use free GIS data:

<http://freegisdata.rtwilson.com>

Free GIS Data

Home

Physical ▾

Human ▾

Country-specific ▾

FAQ

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Donate

This list was last updated on 6 July 2017.

Physical Geography

General

- **Natural Earth - Vector:** Includes coastline, land, oceans, islands, rivers, lakes, glaciated areas and bathymetry. Available at multiple levels of detail. A version of this data is also available in the Wagner VII projection, which has good equal area properties, [here](#).
- **Natural Earth - Raster:** Includes various raster images, intended for use as backgrounds for other data, for example hypsometric tints, satellite derived land cover, shaded relief etc.
- **Global Map:** A set of consistent GIS layers covering the whole globe at 1km resolution including: transportation, elevation, drainage, vegetation, administrative boundaries, land cover, land use and population centres. Produced by the International Steering Committee on Global Mapping. **Registration Required**
- **DIVA-GIS Country Data:** A collection of data collected from a number of the sources below - includes administrative areas, inland water, roads and railways, elevation, land cover, population and climate. Probably the easiest place to get a simple set of data for a specific country.
- **UNEP GEOdata:** A wide range of data from the United Nations Environment Programme including Global Forest Cover, Global Potential Evapotranspiration, Global Average Monthly Temperatures, Dams, Watershed Boundaries and much more. *To get data, choose Advanced Search and select Geospatial Data Sets from the top drop-down link*
- **Koordinates:** GIS data aggregation site including data in a number of categories such as elevation, environment, climate etc. Some global datasets, some based on continents, some for specific countries. Mostly vector, but some raster. **Registration required**
- **MapCruzin:** GIS aggregation site including wide range of data for various areas of the world. Some datasets appears to be of low quality, but others are good.
- **GeoNetwork:** GIS aggregation site including a wide range of data under various categories (both human and physical).
- **European Environment Agency:** Maps and datasets from the European Environment Agency, covering a huge range of physical geography and environmental topics. Europe only.

Land and Ocean Boundaries

- **GSHHS:** A Global Self-consistent, Hierarchical, High-resolution Shoreline Database - which basically means it's good quality (no internal inconsistencies, good accuracy).

Elevation

- **GDEM:** 30m resolution global elevation data derived from ASTER satellite images
- **SRTM:** Approx 90m (3 arc-second) resolution elevation data from the Shuttle Radar Topography Mission for the whole world.
- **EarthEnv-DEM90:** 90m-resolution near-global DEM created by merging the GDEM and SRTM products and post-processing to fill voids and smooth data.
- **ETOPO1:** 1 arc-minute resolution relief model including ocean bathymetry

Opendata.stackexchange.com

Open Data beta

Questions Tags Users Badges Unanswered Ask Question

Tagged Questions

info newest frequent **votes** active unanswered

Geospatial pertains to the geographic location and characteristics of natural or constructed features and boundaries on, above, or below the Earth's surface, particularly referring to data that is geographic and spatial in nature.

[learn more...](#) [improve tag info](#) [top users](#) [synonyms \(1\)](#)

18

votes

9

answers

4k views

Is there an open API for world terrain data?

I'm looking for open-source or publicly-available terrain data, for instance heightmaps or DEMs -- ideally GeoTIFFS by way of an easy-to-use API. For instance: you pass a pair of lat/longs and maybe a ...

[geospatial](#) [api-request](#)

asked May 10 '13 at 17:01



[meetar](#)

354 • 5 • 12

14

votes

7

answers

Looking for Open Data Source to Correlate Address to Latitude/Longitude (geocoding)

Are there any open data sources that can help correlate a given address to a latitude/longitude coordinate? aka geocoding

[data-request](#) [geospatial](#) [address](#) [geocoding](#)

asked May 22 '13 at 21:08

338

questions tagged

[geospatial](#) [about »](#)

BLOG

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- [Mapping Ecosystems of Software Development](#)

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OSM girls & boys from Belgium at STOM 2016, Bruxelles



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