
Visualizing and Exploring Linked Spatiotemporal Data using Sextant

[ESWC2013 (best demo award)]
[ISWC2013]



Konstantina Bereta, Kallirroï Dogani, George Garbis, Manos Karpathiotakis, Kostis Kyzirakos, **Charalampos Nikolaou**, Manolis Koubarakis



HELLENIC REPUBLIC
National and Kapodistrian
University of Athens



Linked Data Europe: Tools and Applications

March 21st, 2014, Athens, Greece



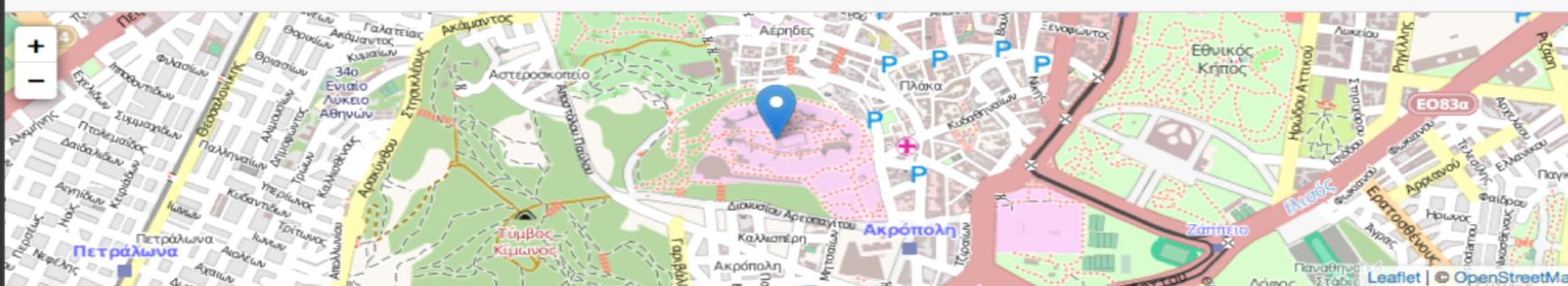
Ακρόπολη Αθηνών

Place, Μνημείο Παγκόσμιας Πολιτιστικής Κληρονομιάς (Πληροφορίες ΠΠΚ)

Η Ακρόπολη Αθηνών είναι ένας βραχώδης λόφος ύψους 156 μ. από την επιφάνεια της θάλασσας και 70 μ. περίπου από το επίπεδο της πόλης της Αθήνας. Η κορυφή του έχει σχήμα τραπεζοειδές μήκους 300 μ. και μέγιστου πλάτους 150 μ. Ο λόφος είναι απρόσιτος απ' όλες τις πλευρές εκτός της δυτικής, όπου και βρίσκεται η οχυρή είσοδος, η διακοσμημένη με τα λαμπρά Προπύλαια.

με τα λαμπρά Προπύλαια.

dbpedia rdf.freebase.com/ns/m.0wjw el.wikipedia.org/wiki/Ακρόπολη_Αθηνών



Property:

Value:

dbpedia-owl:abstract :

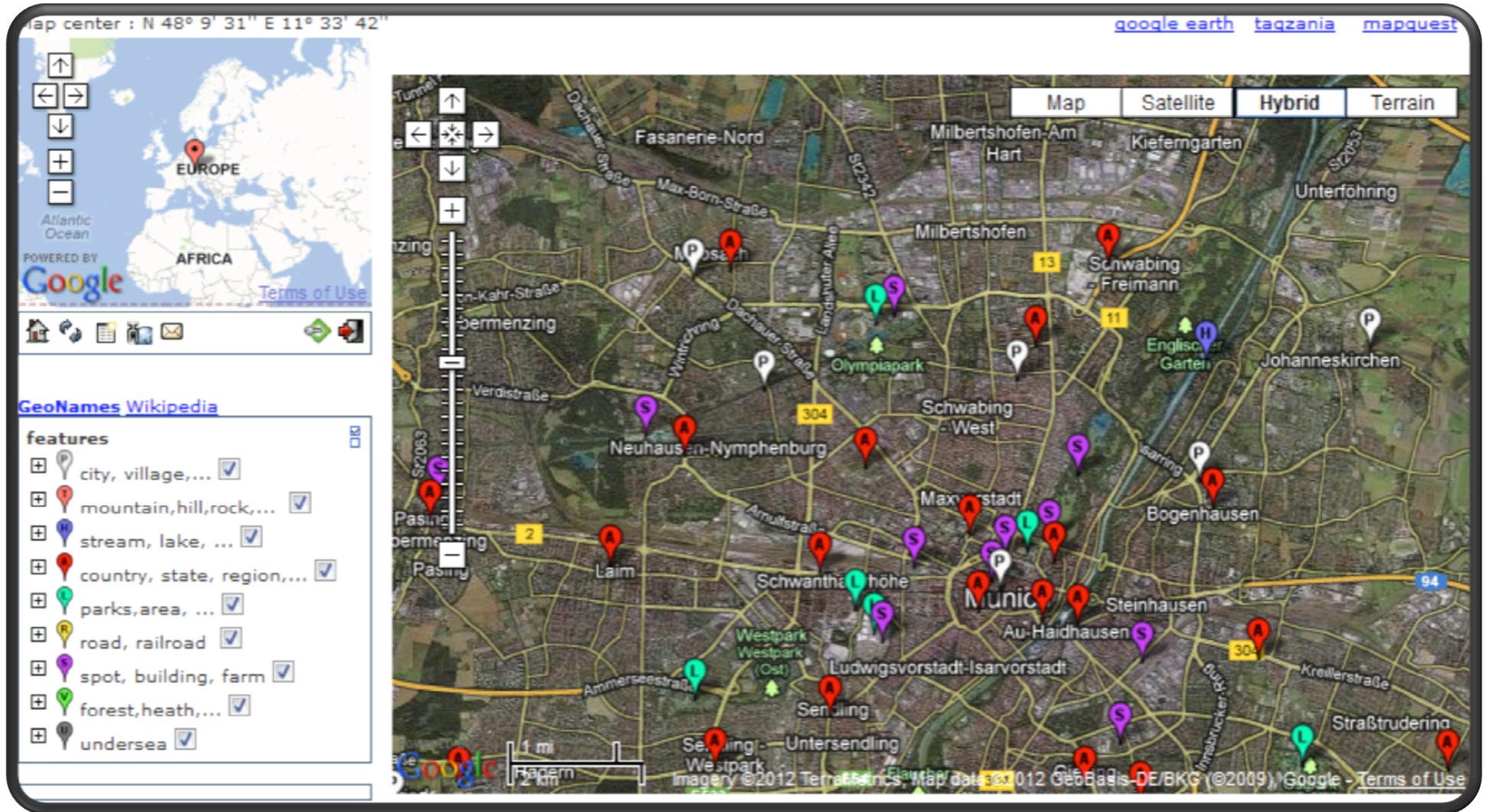
Η Ακρόπολη Αθηνών είναι ένας βραχώδης λόφος ύψους 156 μ. από την επιφάνεια της θάλασσας και 70 μ. περίπου από το επίπεδο της πόλης της Αθήνας. Η κορυφή του έχει σχήμα τραπεζοειδές μήκους 300 μ. και μέγιστου πλάτους 150 μ. Ο λόφος είναι απρόσιτος απ' όλες τις πλευρές εκτός της δυτικής, όπου και βρίσκεται η οχυρή είσοδος, η διακοσμημένη με τα λαμπρά Προπύλαια.

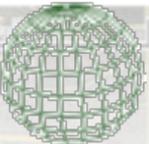
dbpedia-owl:country :

dbpedia-el:Ελλάδα



Available on dbpedia.org/ as linked data



Available on  GeoNames as linked data

Open Street Map (OSM)



Search: [] powered by Nominatim

Facets

- Node (400)
- ManMade (9)
- Amenity (2)
- Landuse (1)
- Tourism (31)
- Natural (35)
- Historic (3)
- Place (1)
- Leisure (1)

1: Embassy of the Czech Republic
2: Metro
3: Commission Européenne
4: Thon Parnasse Hotel
5: Au vieux Bruxelles
6: ING Marnix
7: ING Porte de Namur
8: La Maison des Cyclistes
9: Porte de Namur
10: Mondo Hotel Leopold Br
11: Restaurant Le Bretagne
12: ISS
13: Coaster
14: CEFA
15: Clinique des Chartreux
16: In 't Spinnekopke
17: Park
18: Twist
19: Bat. Administratif
20: Metro
21: Tunnel entre Gare Cent
22: EHSAL hogeschool
23: Gare du Congrès
24: BELGACOM
25: GALERIE RAVENSTEIN
26: Sint Michiels kathedraal
27: Nationale Bank van Belg
28: Radisson Blu Royal Hotel
29: The Office
30: ING
31: La Sirène
32: Congrès - Congres
33: Pizza Hut
34: A la Mort Subite
35: Ministère des Finances
36: Metro Porte de Hal
37: multiPharma
38: Rue de L'Epee
39: Rue des Renards, Bruss
40: Louise
41: RESTAURANT 'EL GRECO'
42: Restaurant 'La Boule Ro
43: Ancienne Belgique
44: Café O'Reilly's
45: Interparking
46: RESTAURANT 'MINOS'
47: LA MAISON DU MIEL
48: Subway
49: Pathé Palace

hide

Chapelle - Kapellekerk
<http://linkedgeo.org/tripify/node489098929>

rdf:type <http://linkedgeo.org/ontology/#node>
rdf:type <http://linkedgeo.org/ontology/Amenity>
rdf:type <http://linkedgeo.org/ontology/BusStation>
rdfs:label@nl Kapellekerk
rdfs:label@fr Chapelle
lgdo:directType <http://linkedgeo.org/ontology/BusStation>
geo:geometry POINT(4.34936 50.8417)
geo:lat 50.8417023
geo:long 4.349355
lndo:contributor <http://linkedgeo.org/tripify/index.html>

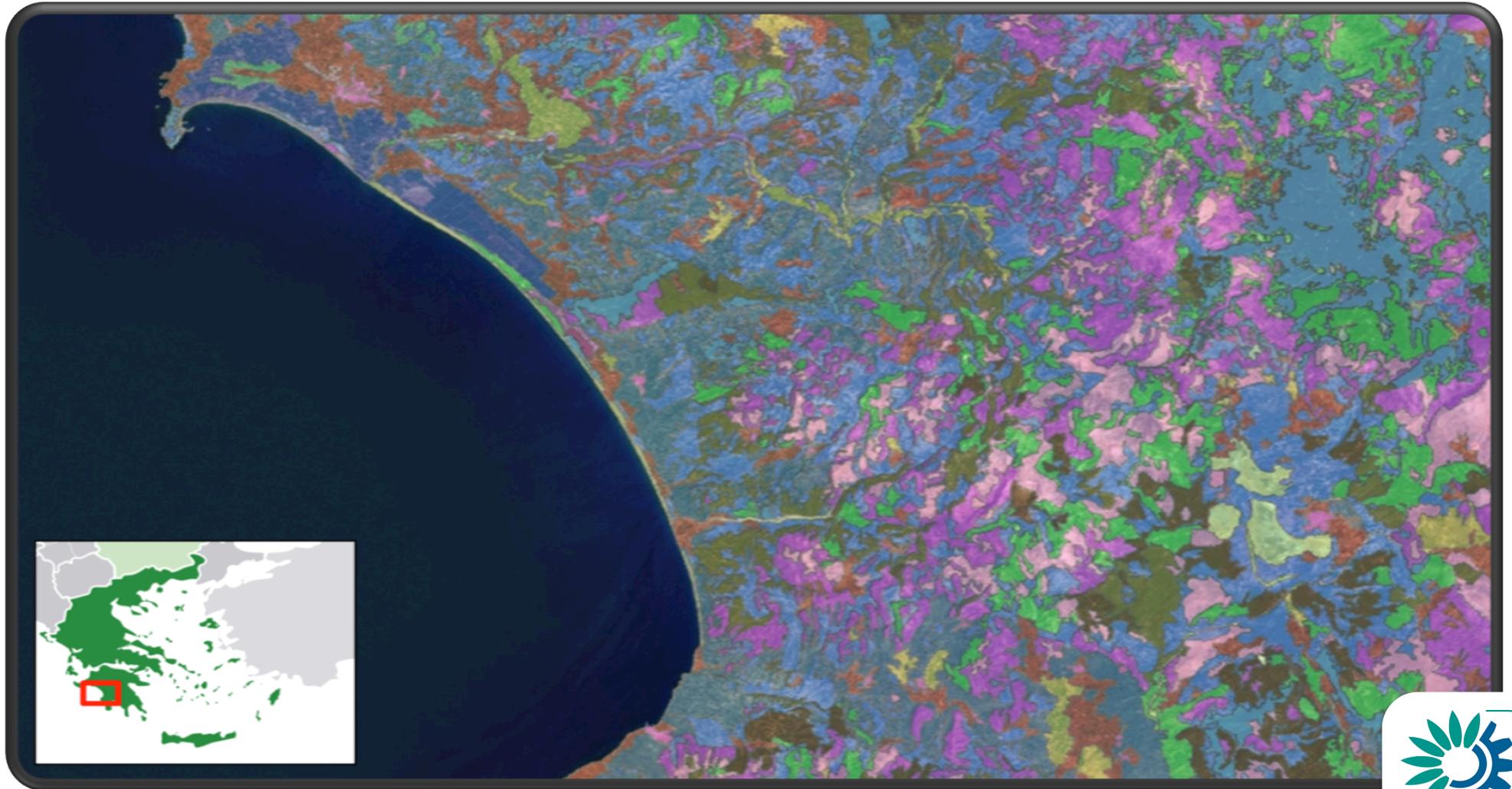
AKSW

Available on



as linked data

CORINE Land Cover (CLC)

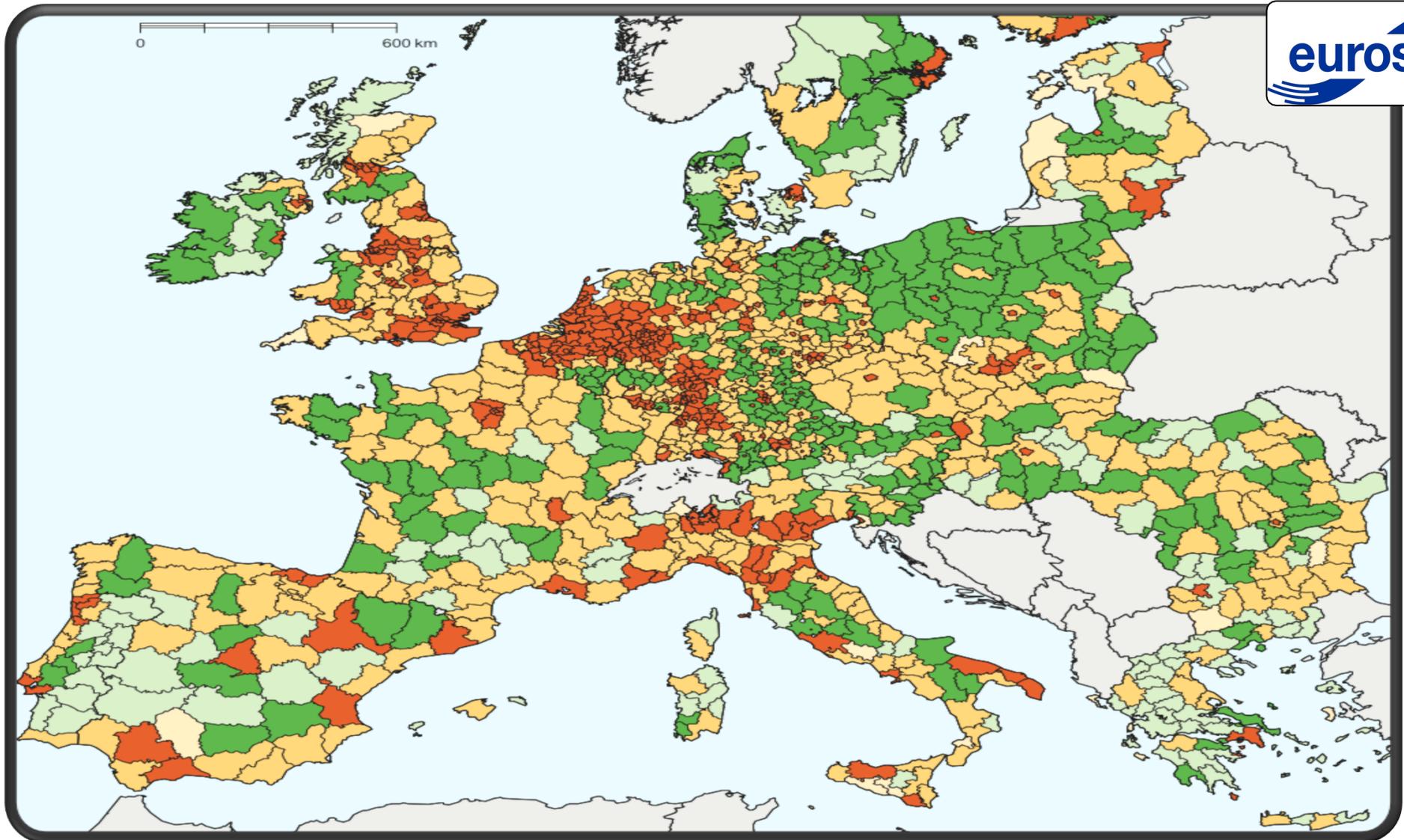


Available on  **datahub** as linked data

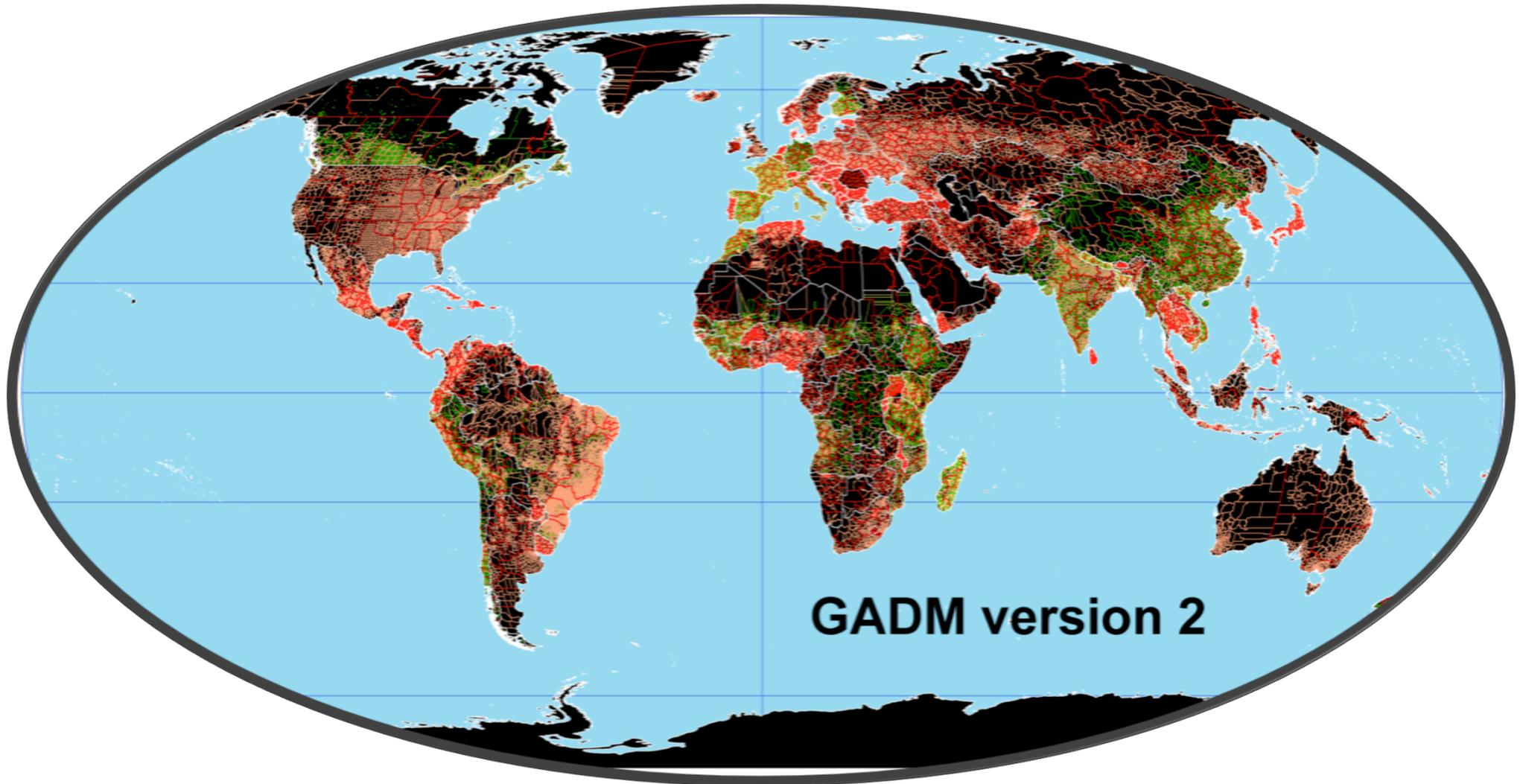


Available on  **datahub** as linked data

European Nomenclature of Territorial Units for Statistics (NUTS)



Available on [GeoVocab.org](https://www.geovocab.org/) as linked data



Available on GeoVocab.org as linked data



Available on linkedopendata.gr as linked data

Where is the **temporal** dimension?



- Sensor data (e.g., wind direction)
- Earth observation data (e.g., satellite acquisitions, EO standard products)
- Simulations of events (e.g., fire spread, oil spill spread)
- Evolution (e.g., land cover)
- Marine surveillance
- Census data (periodically)

The tool Sextant



Sextant is a web-based tool for:

- **visualizing** and **exploring** linked spatiotemporal data
- **creating thematic maps** by
 - by querying **linked spatiotemporal data**
 - geospatial data sources in **OGC standard file formats** (e.g., KML)
- **sharing** and **collaborative editing** of thematic maps



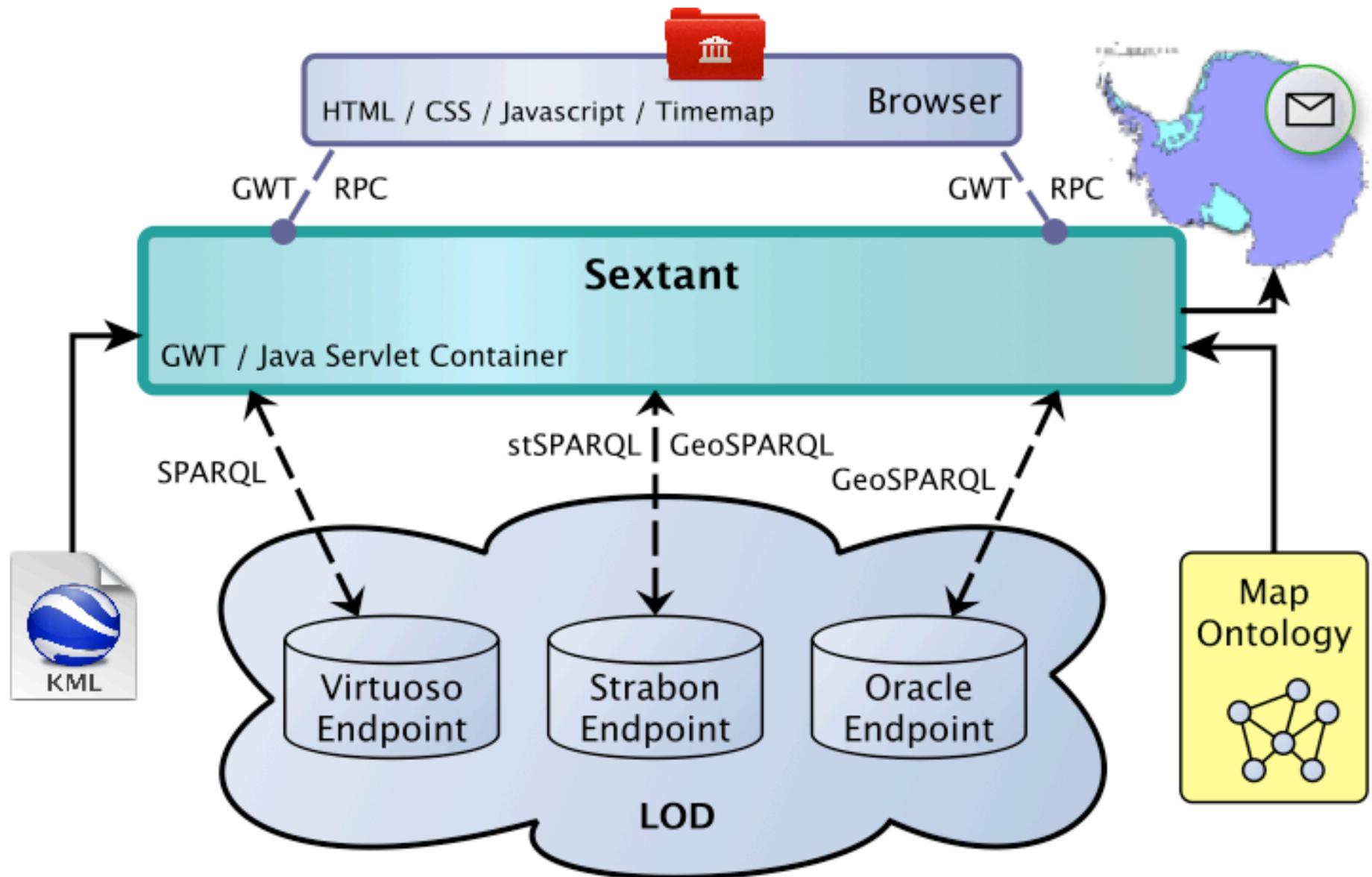
SPARQL
stSPARQL
GeoSPARQL



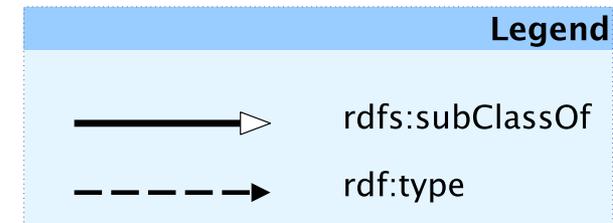
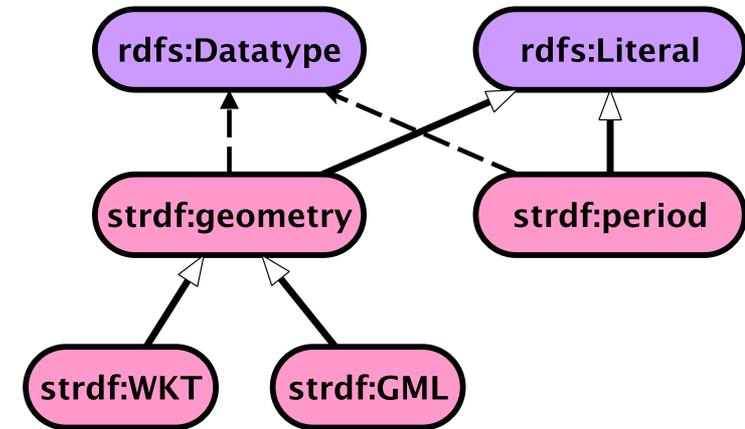
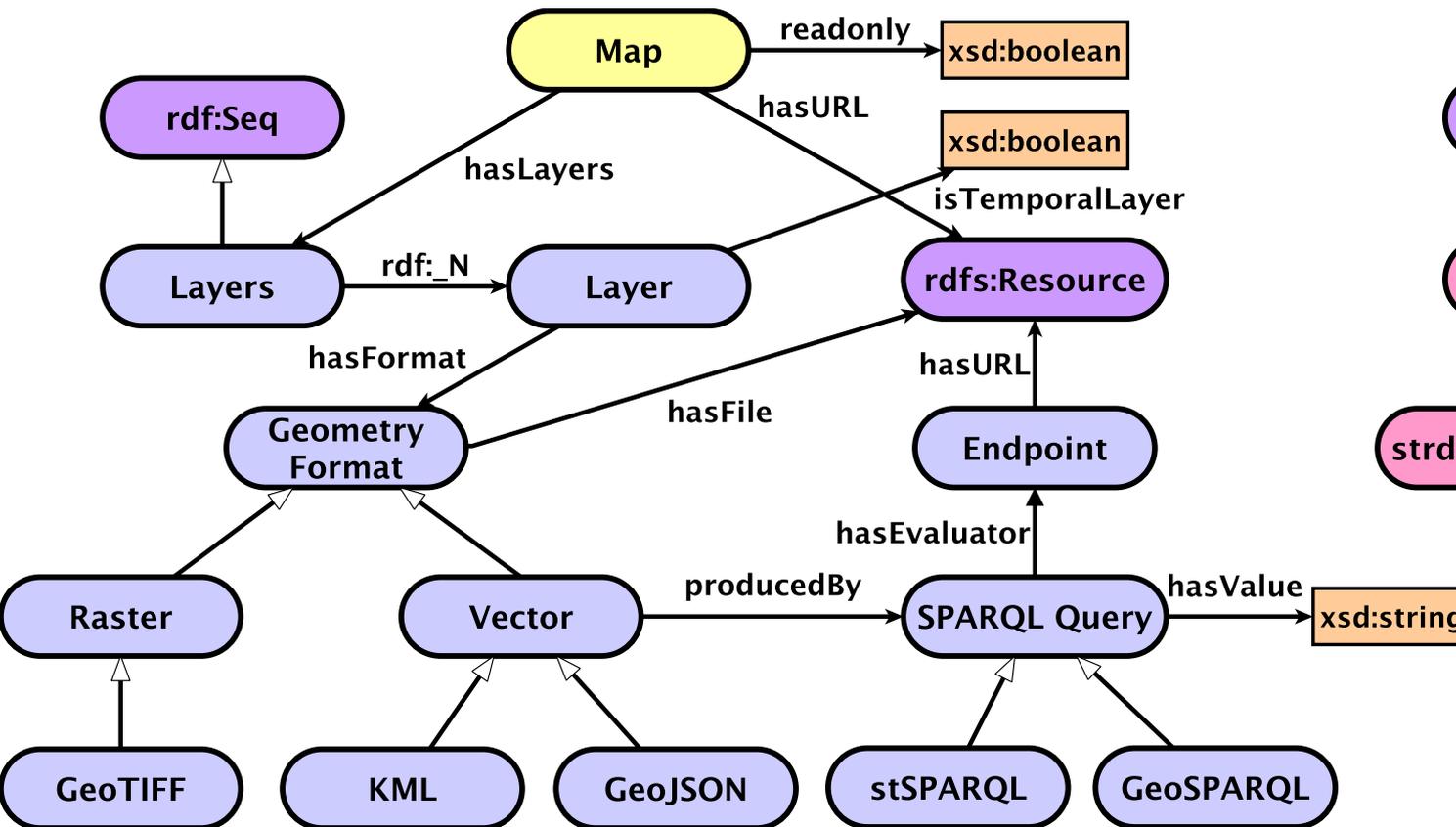
Find more at:
<http://sextant.di.uoa.gr/>

Interoperable with well-known GIS tools
(e.g., ArcGIS, QGIS, Google Earth)

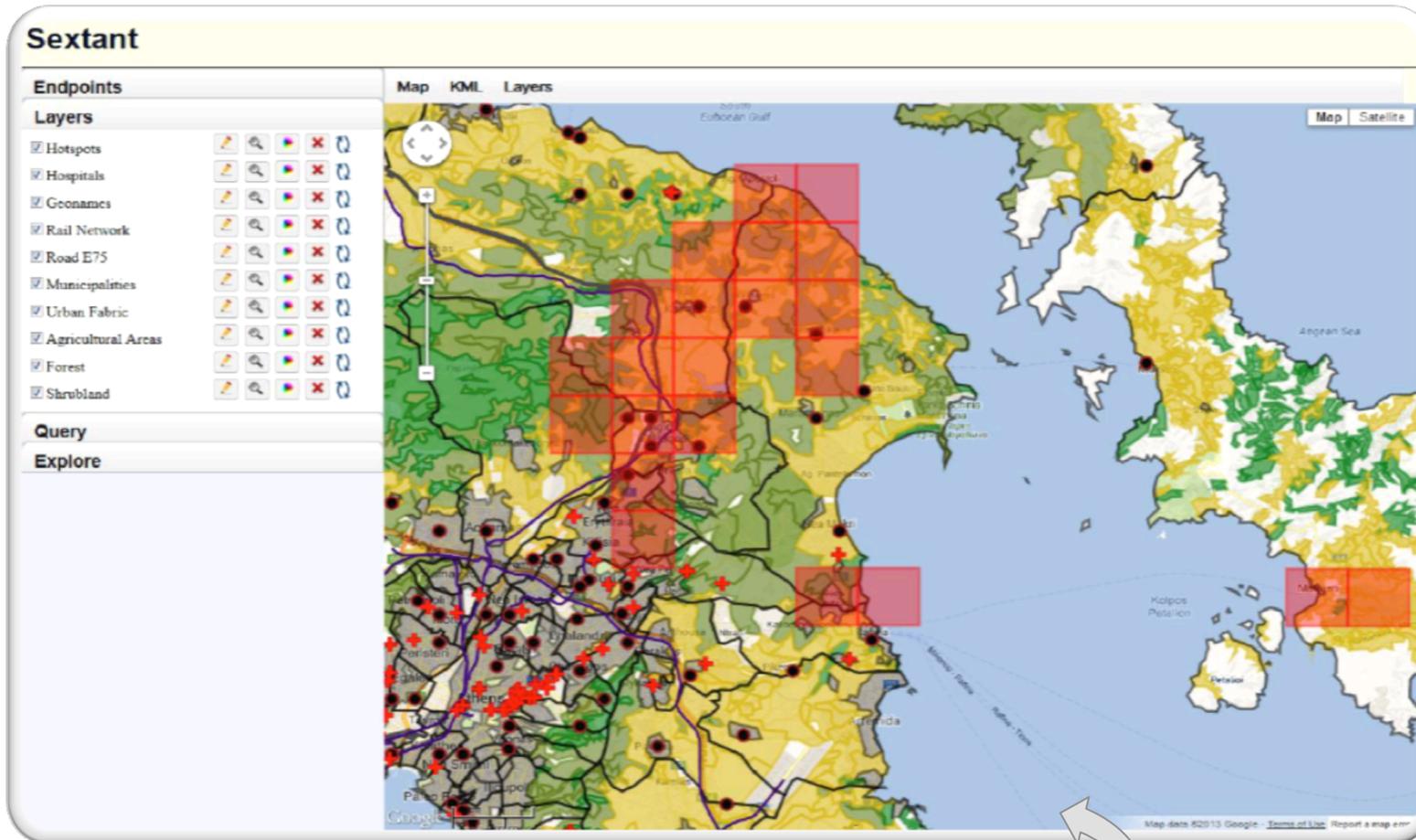
The architecture of Sextant



Map ontology



Rapid mapping



<http://bit.ly/sextant-rapid-mapping-attica>

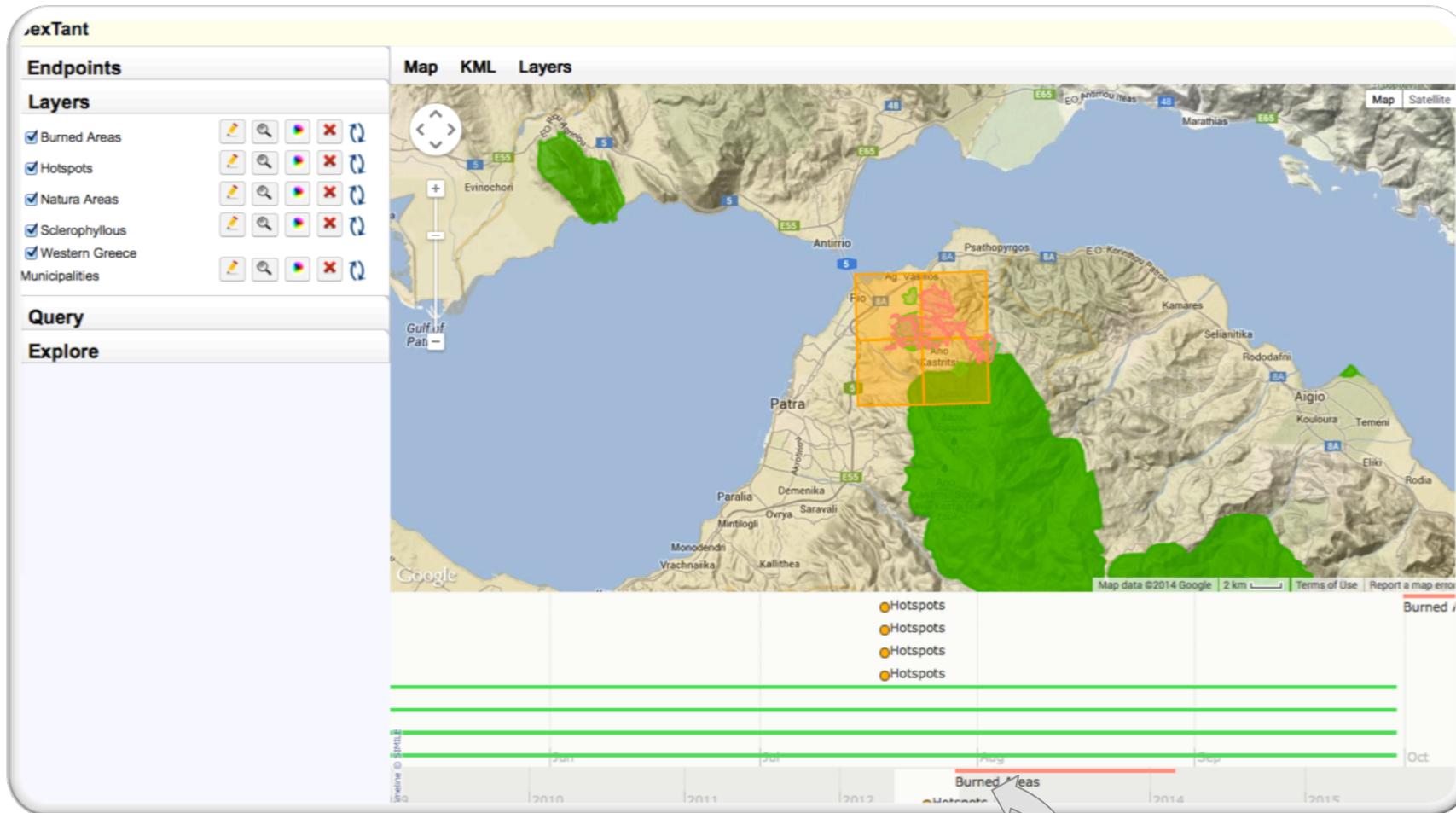
Copernicus

Safer
Services and Applications For Emergency Response



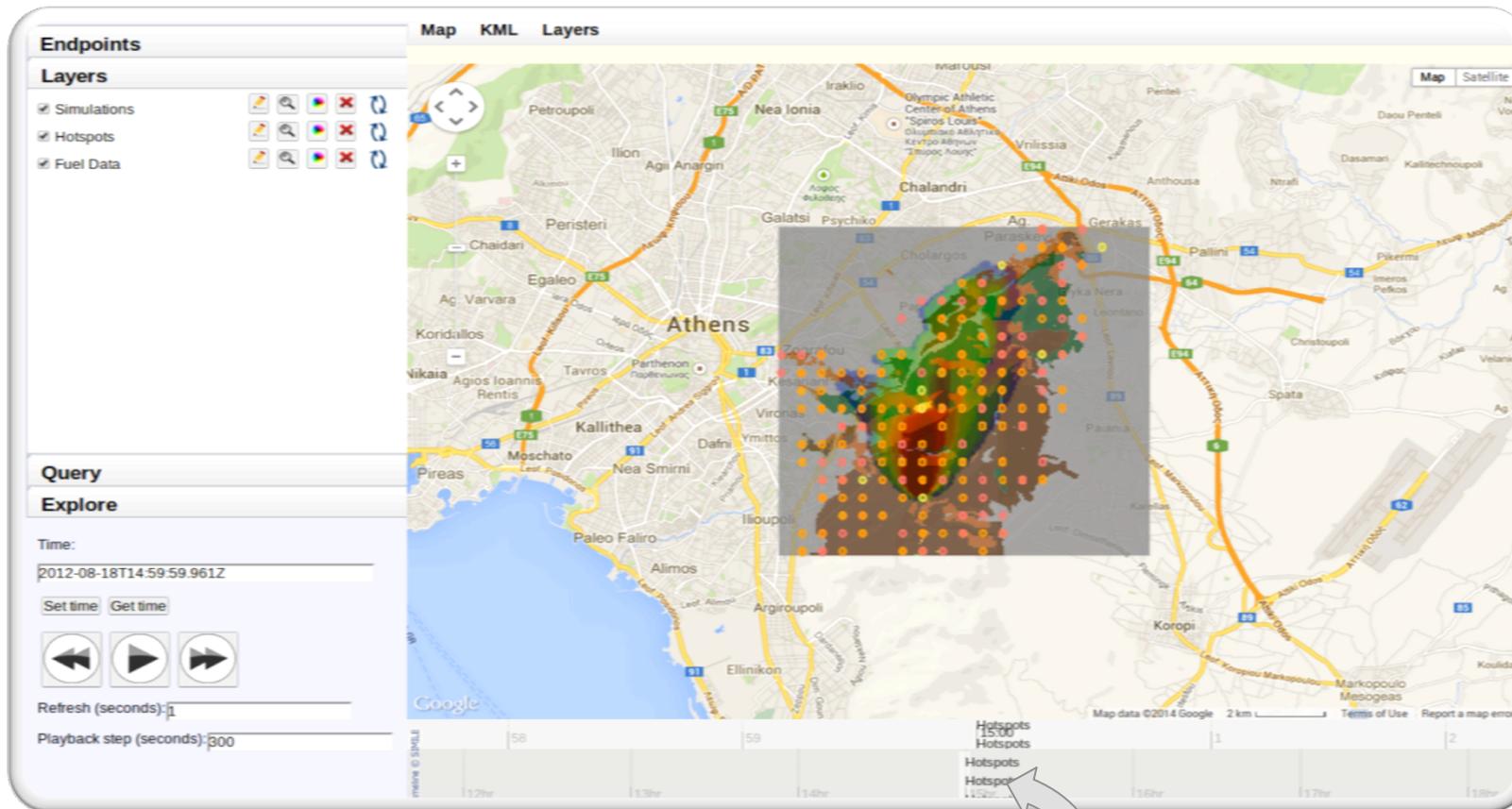
TELEIOS

Evolution of land cover



<http://bit.ly/sextant-land-cover-evolution>

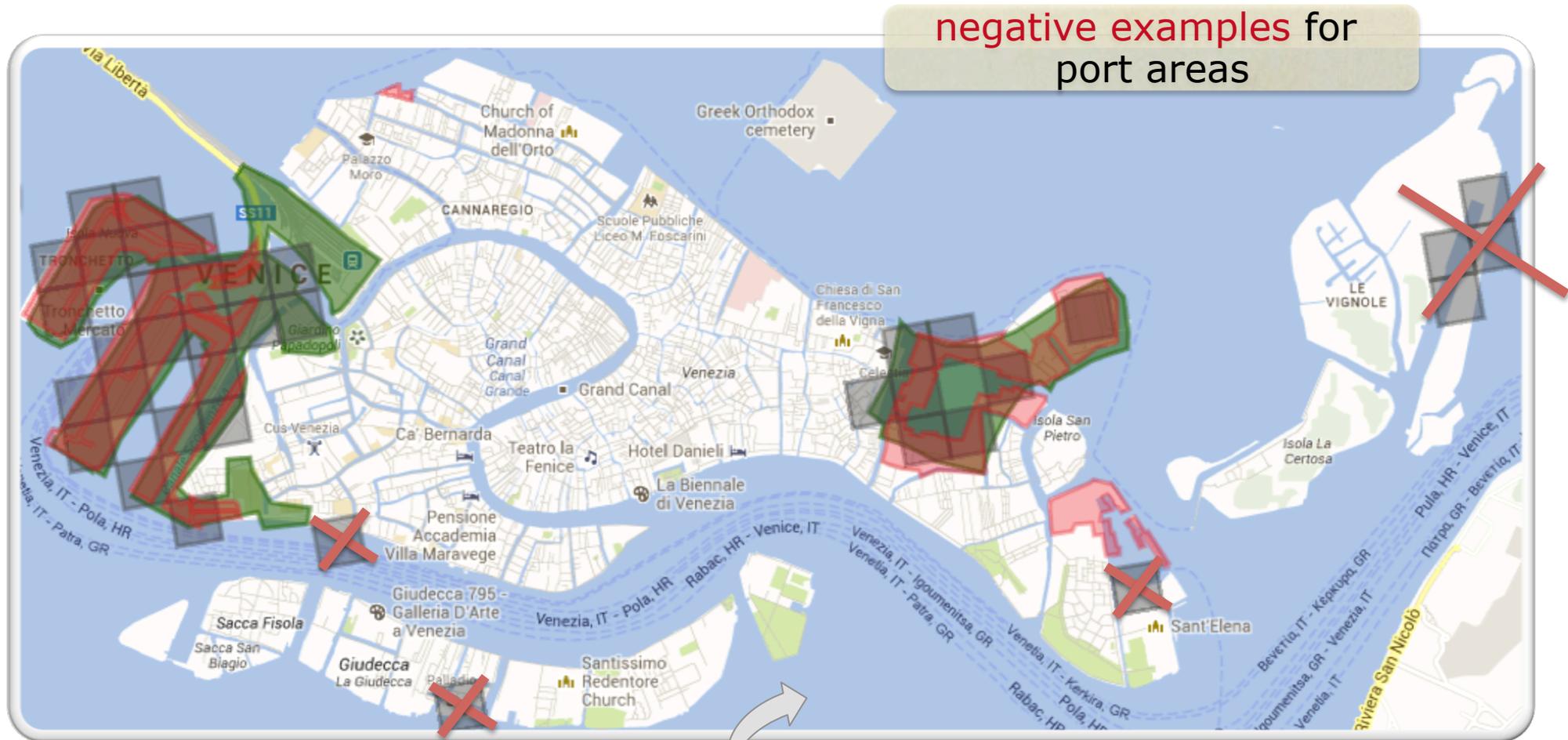
Simulation of fire spread



<http://bit.ly/sextant-fire-front-monitor>

SWeFS

Semantic annotation of Earth Observation images



CLC DLR UA



<http://bit.ly/sextant-venice-ports>

Sextant is being extended



- ✓ Map registry
- ✓ Legend information
- ✓ Production of statistical maps
- ✓ Development of appropriate interfaces for mobile platforms
- ✓ Query builder integration
- ✓ Support of more file formats: ESRI shapefiles, JPEG JFIF, FITS, etc.

Tell us about your needs!

Thanks

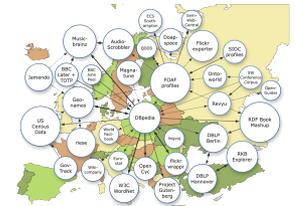
Useful links



- Sextant
<http://sextant.di.uoa.gr/>



- Strabon
<http://strabon.di.uoa.gr/>



- LEO project
<http://linkeddeodata.eu/>



- TELEIOS project
<http://earthobservatory.eu/>



- Linked EO data
<http://datahub.io/organization/teleios>

