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The Pros and Cons of Using Linked Data as a means to Support Open Geospatial Data

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European Union
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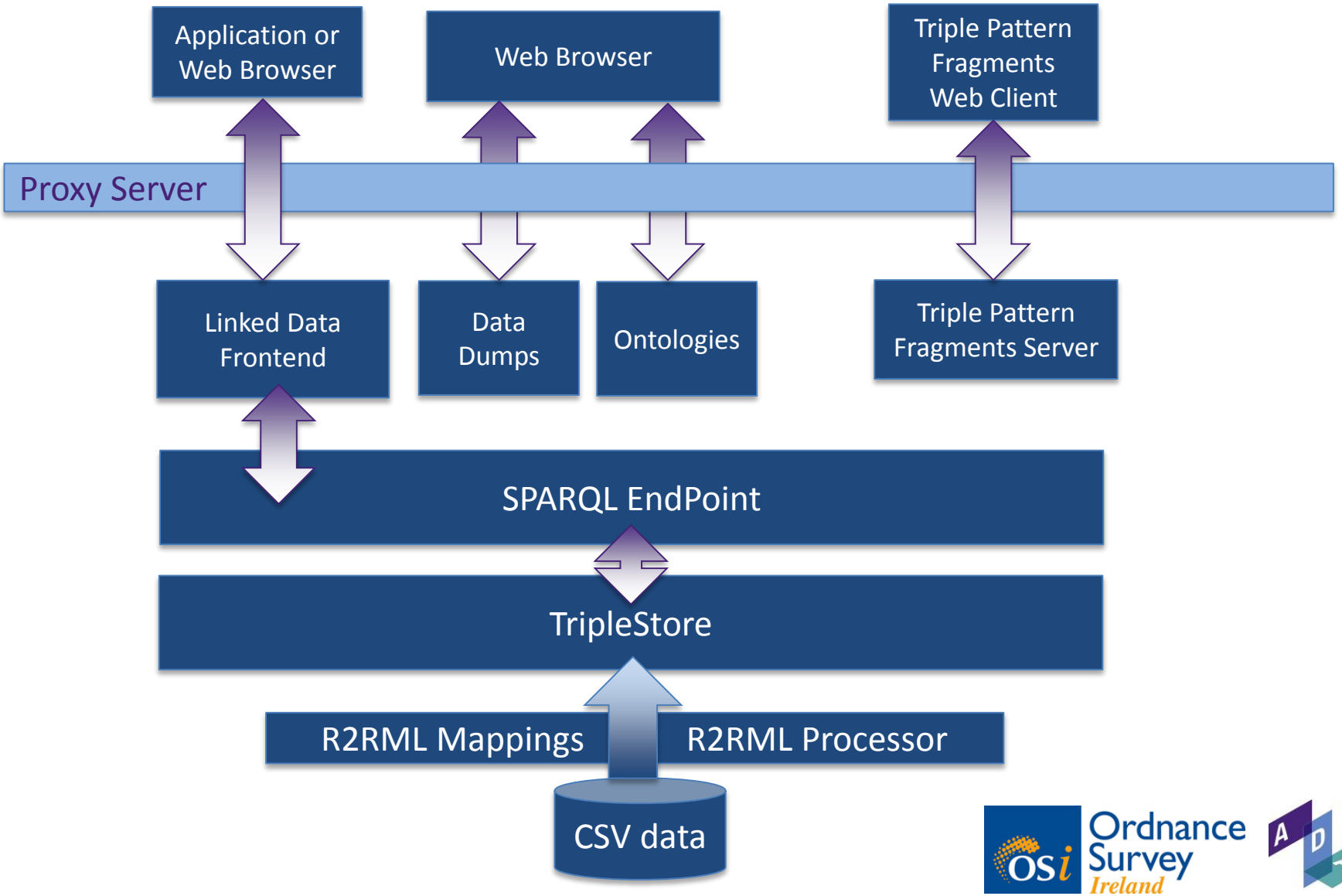
Context

- Ordnance Survey Ireland (OSi) is Ireland's authoritative source for Geospatial information.
- OSi and the ADAPT Centre developed a **Linked Data platform** available at **data.geohive.ie**
- Currently published on the platform is the national boundary dataset – more to come in the future

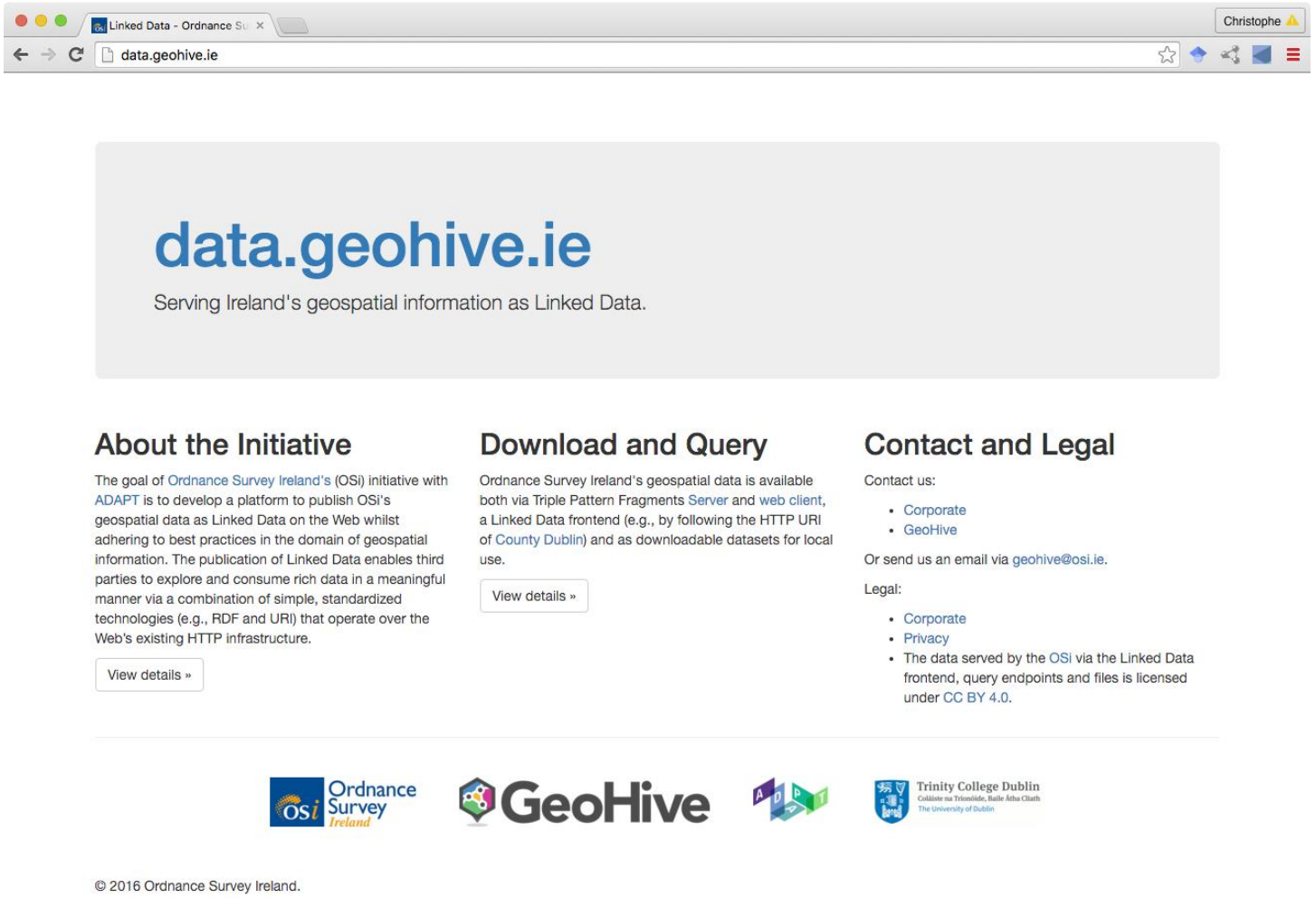
Conceptual Architecture of the LD Platform



Tools of Interest from the LD Platform

- **R2RML Implementation:** Tool developed within ADAPT for converting *Tabular Data* to *RDF*
- **Parliament Triple Store:** RDF database which supports GeoSPARQL – perform functions on geometries
- **Pubby Frontend:** Linked Data frontend. Serve data as human-friendly and machine-friendly form. Customisable.
- **Triple-Pattern Fragment:** Reduces *server* side query processing load by having the *client* do it.

Homepage


Linked Data - Ordnance Su
Christophe
data.geohive.ie
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 and Query
Ordnance Survey Ireland's geospatial data is available both via Triple Pattern Fragments Server and web client, 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.
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.
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GeoHive
Trinity College Dublin
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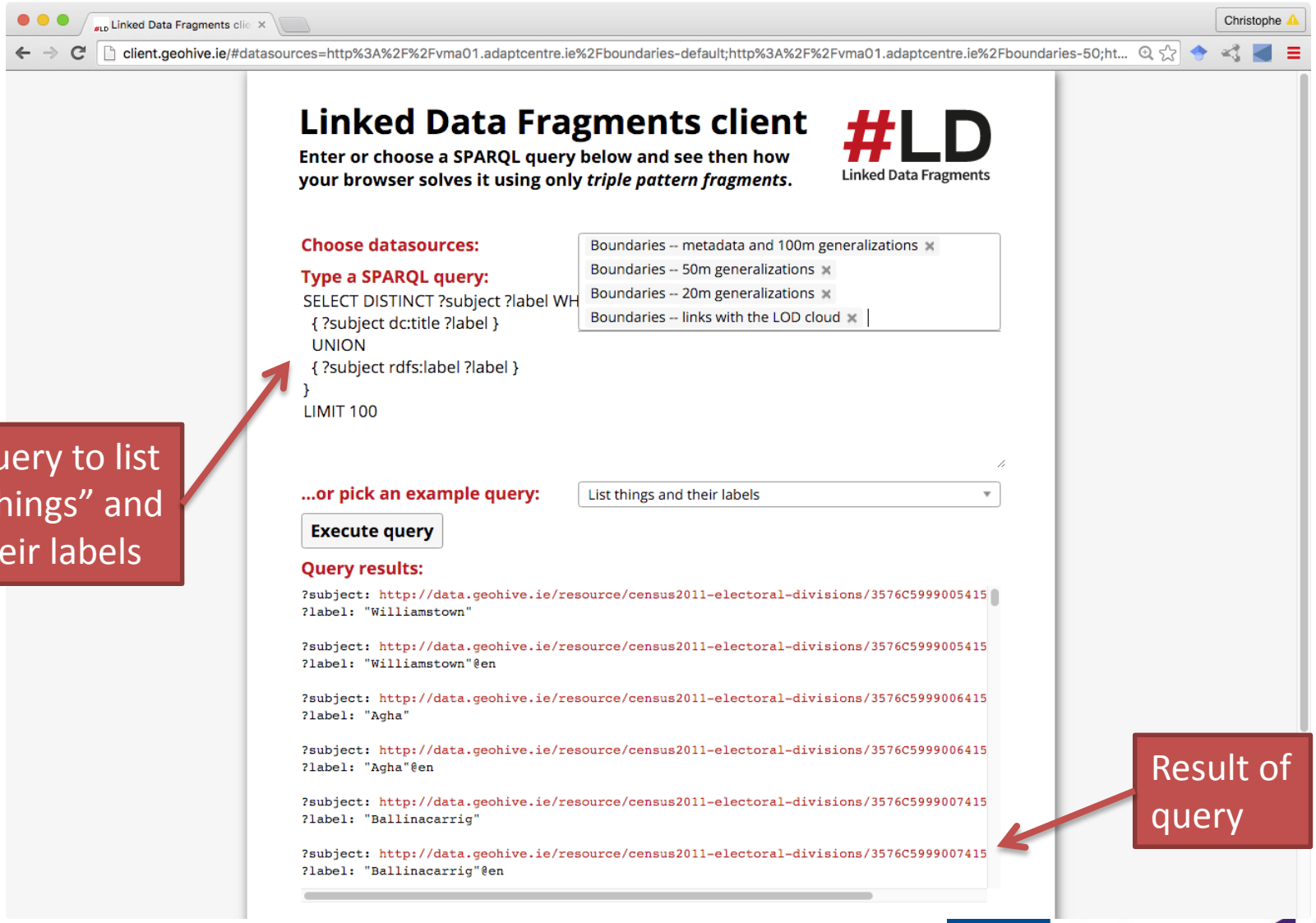
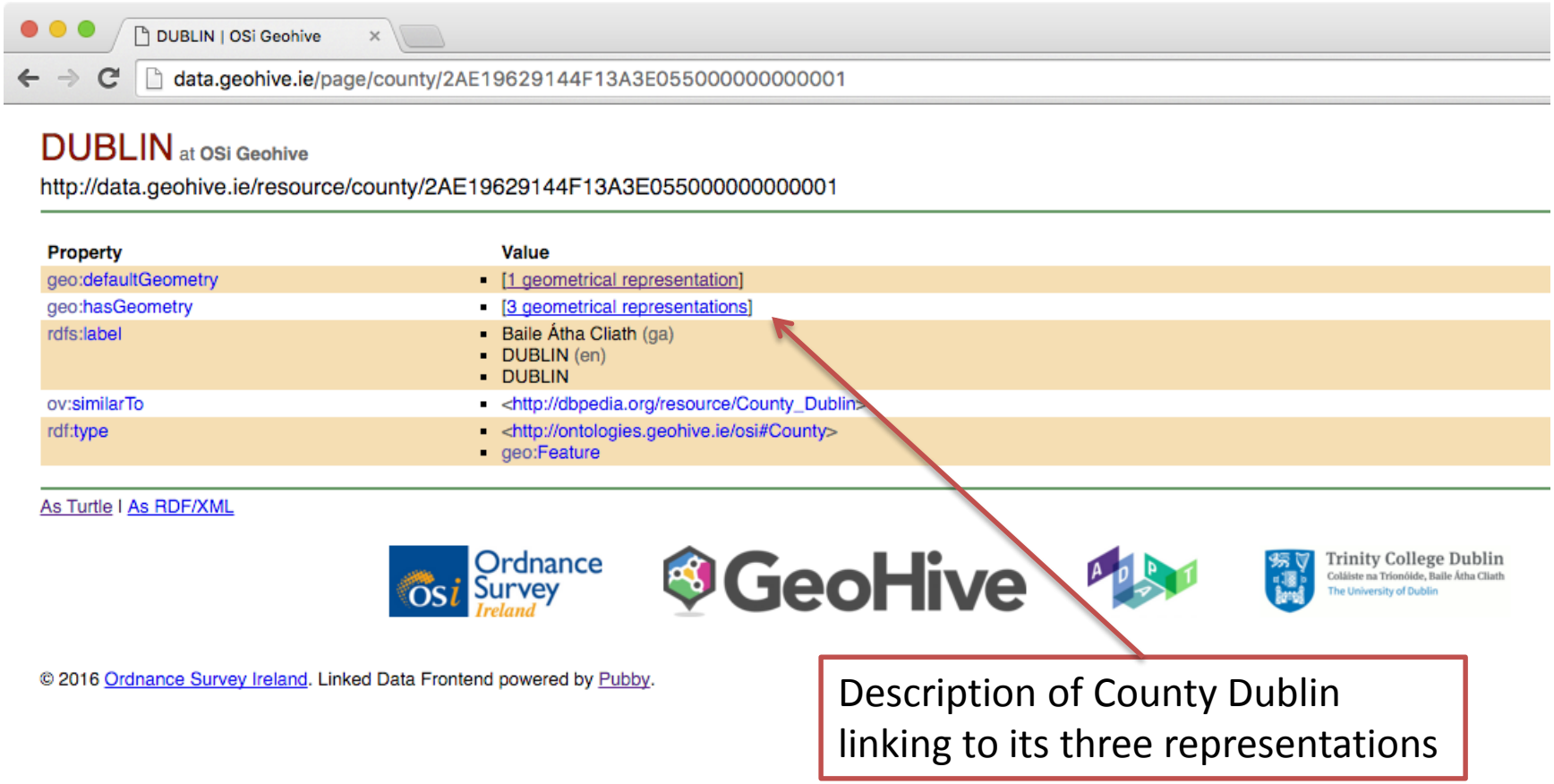
Triple Pattern Fragments Client Example



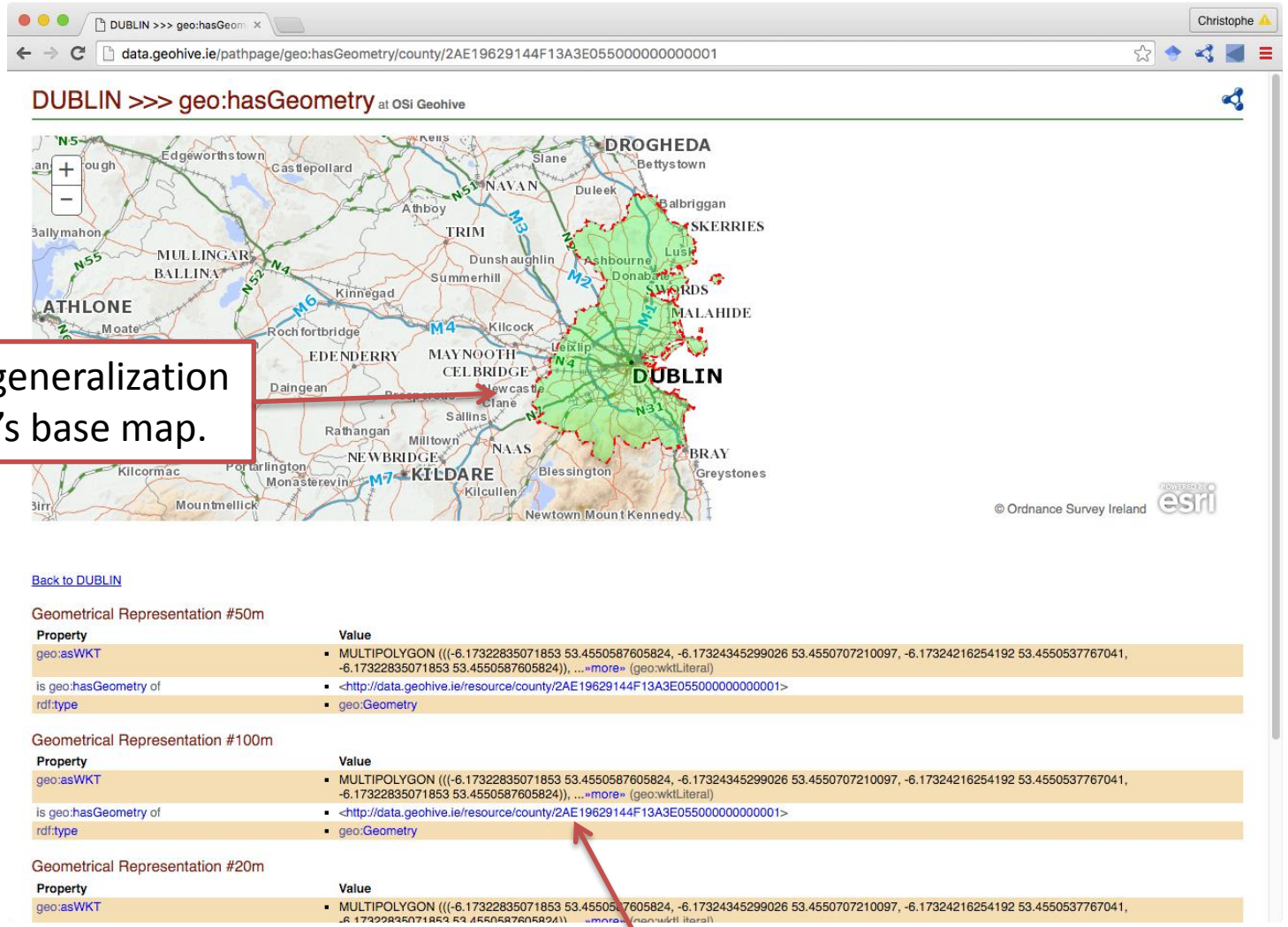
Query to list "things" and their labels

Result of query

Frontend Example



Frontend Example



Default generalization with OSi's base map.

Different representations

Dump Download Page

Download the Data

OSi "boundary" database contains geometrical representations of the boundaries of the administrative units (e.g., county, city, and rural area) of the Republic of Ireland. These are generalized up to 20, 50 and 100 meters. The following table allows boundary data to be downloaded in the RDF Turtle format.

Administrative Unit	Boundary Generalisation (in meters)		
	20	50	100 (default)
Barony	Barony 20m	Barony 50m	Barony 100m
Census 2011 Cities and Legal Towns	Cen 11 Cities and Legal Towns 20m	Not available	Cen 11 Cities and Legal Towns 100m
Census 2011 Electoral Divisions	Cen 11 Electoral Divisions 20m	Not available	Cen 11 Electoral Divisions 100m
Census 2011 Electoral Divisions Links	Cen 11 Electoral Divisions Links		
Census 2011 Settlements	Cen 11 Settlements 20m	Not available	Cen 11 Settlements 100m
Census 2011 Small Areas General	Cen 11 Small Areas General 20m	Not available	Cen 11 Small Areas General 100m
City and County Council	City and County Council 20m	City and County Council 50m	City and County Council 100m
City Council	City Council 20m	City Council 50m	City Council 100m
County	County 20m	County 50m	County 100m
County Council	County Council 20m	County Council 50m	County Council 100m
Electoral Division	Electoral Divisions 20m	Electoral Divisions 50m	Electoral Divisions 100m
Local Electoral Area	Local Elec Area 20m	Local Elec Area 50m	Local Elec Area 100m
Municipal Districts	Municipal Districts 20m	Municipal Districts 50m	Municipal Districts 100m
Parish	Parish 20m	Parish 50m	Parish 100m
Rural Area	Rural Area 20m	Rural Area 50m	Rural Area 100m
Townland	Townland 20m	Townland 50m	Townland 100m
Totals	Totals 20m	Totals 50m	Totals 100m
Links to DBpedia	Links to DBpedia		
Full Dump	Full Dataset (large file)		

Datahub: https://datahub.io/dataset/geohive

Pros and Cons

- **Pros:**
  - Publish individual resources on the web
  - Human and machine friendly data
  - Link to external data sources for enrichment
- **Cons:**
  - RDF not widely adopted (yet)
  - Tools not very mature (typically from research projects)
  - Not all tools maintained (regularly)

Summary and Tool References

Platform developed using Linked Data technology to publish open authoritative Irish geospatial data. Available at data.geohive.ie

Tool References:

- **R2RML Implementation:**
  https://opengogs.adaptcentre.ie/debruync/r2rml

- **Parliament Triple Store:**
  http://parliament.semwebcentral.org/

- **Pubby Frontend:**
  http://wifo5-03.informatik.uni-mannheim.de/pubby/

- **Triple-Pattern Fragment:**
  http://linkeddatafragments.org/

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