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INSTITUT NATIONAL
DE L'INFORMATION
GÉOGRAPHIQUE
ET FORESTIÈRE

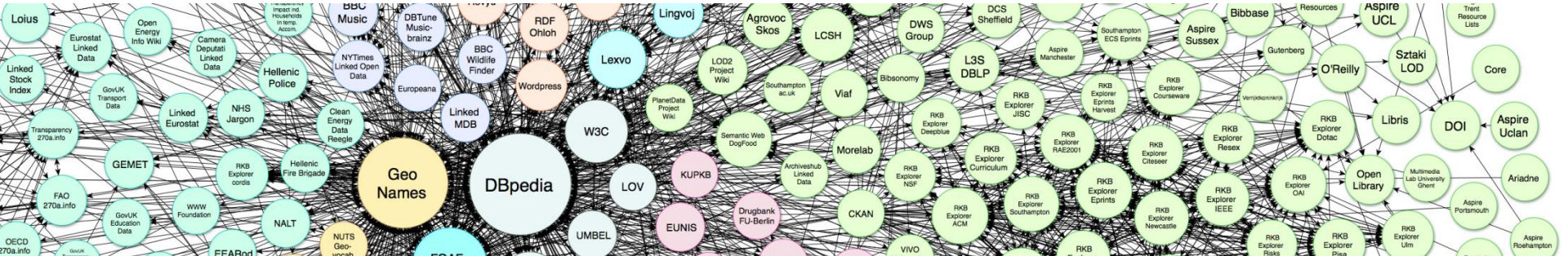
COGIT

ÉCOLE DOCTORALE UNIVERSITÉ PARIS-EST
Mathématiques et STIC

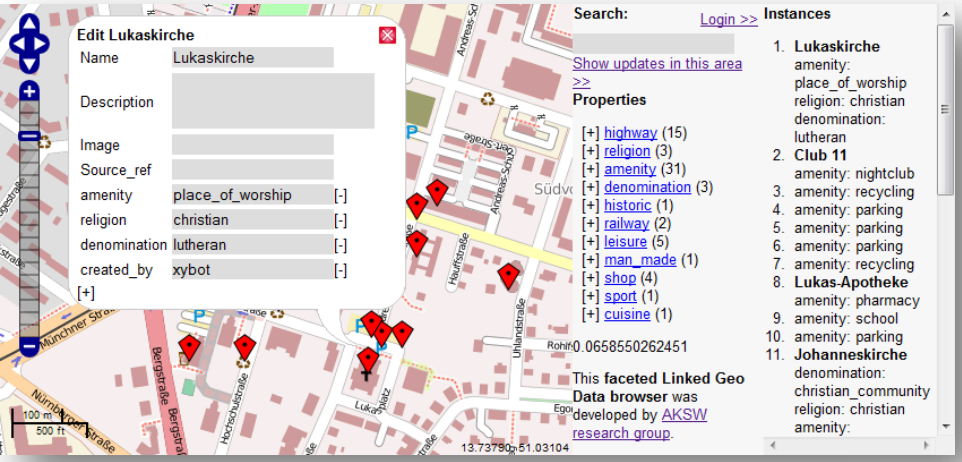
Interlinking on spatial criteria on the Geoweb

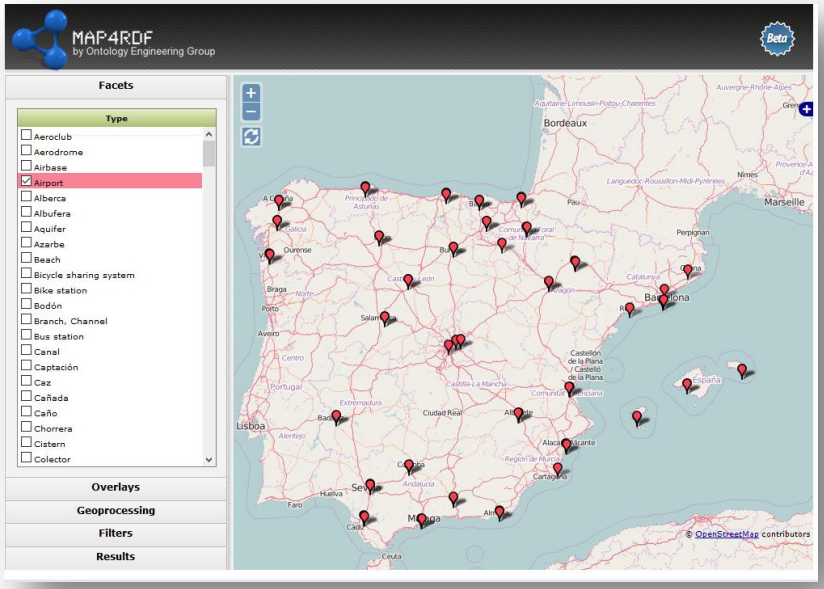
Abdelfettah FELIACHI.

Geodata on the Web Seminar – February 10th & 11th 2016



The Geoweb


Edit Lukaskirche
Name Lukaskirche
Description
Image
Source_ref
amenity place_of_worship [-]
religion christian [-]
denomination lutheran [-]
created_by xybot [-]
[+]
Search:
Login >>
Show updates in this area >>
Properties
[+] highway (15)
[+] religion (3)
[+] amenity (31)
[+] denomination (3)
[+] historic (1)
[+] railway (2)
[+] leisure (5)
[+] man_made (1)
[+] shop (4)
[+] sport (1)
[+] cuisine (1)
Instances
1. Lukaskirche amenity: place_of_worship religion: christian denomination: lutheran
2. Club 11 amenity: nightclub
3. amenity: recycling
4. amenity: parking
5. amenity: parking
6. amenity: parking
7. amenity: recycling
8. Lukas-Apotheke amenity: pharmacy
9. amenity: school
10. amenity: parking
11. Johanneskirche denomination: christian_community religion: christian amenity:
0.0658550262451
This faceted Linked Geo Data browser was developed by AKSW research group.
13.73790,51.03104


MAP4RDF
by Ontology Engineering Group
Beta
Facets
Type
Aeroclub
Aerodrome
Airbase
Airport
Alberca
Albufera
Aquifer
Azarbe
Beach
Bicycle sharing system
Bike station
Bodón
Branch, Channel
Bus station
Canal
Captación
Caz
Cañada
Caño
Chorrera
Cistern
Colector
Overlays
Geoprocessing
Filters
Results
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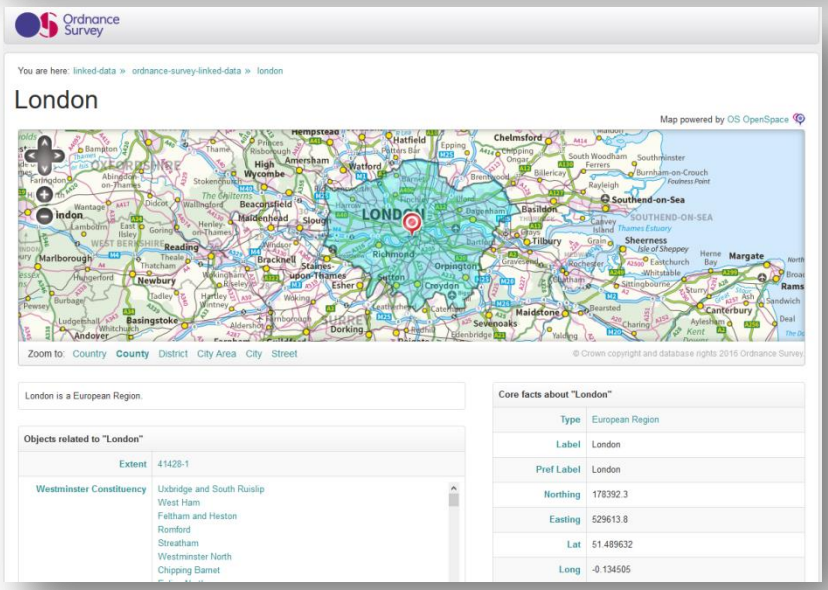
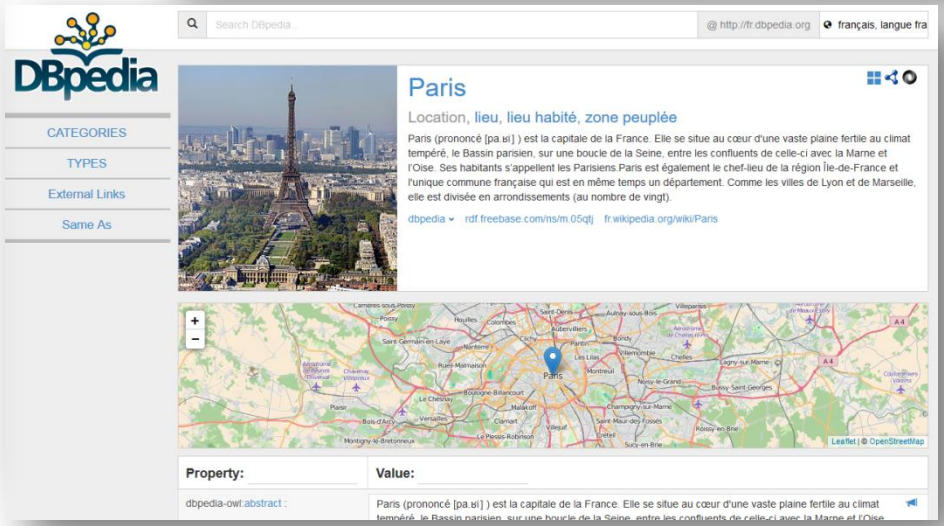
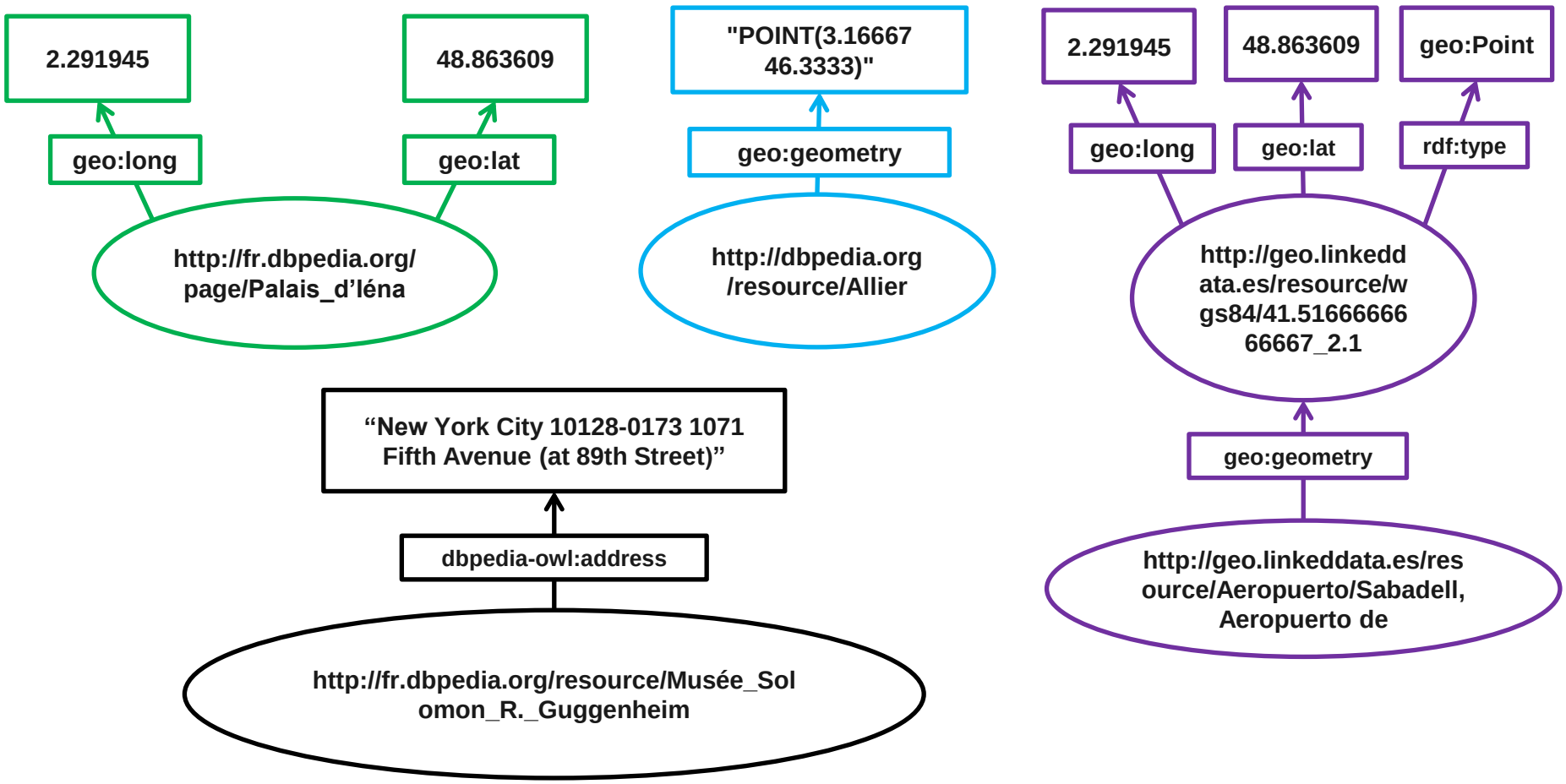
Lisboa
© OpenStreetMap contributors


Ordnance Survey
You are here: linked-data » ordnance-survey-linked-data » london
London
Map powered by OS OpenSpace
Zoom to: Country County District City Area City Street
© Crown copyright and database rights 2016 Ordnance Survey
London is a European Region.
Objects related to "London"
Extent 41428-1
Westminster Constituency Uxbridge and South Ruislip
West Ham
Feltham and Heston
Romford
Streatham
Westminster North
Chipping Barnet
Core facts about "London"
Type European Region
Label London
Pref Label London
Northing 178392.3
Easting 529613.8
Lat 51.489632
Long -0.134505


DBpedia
CATEGORIES
TYPES
External Links
Same As
Search DBpedia
@ http://fr.dbpedia.org
français, langue fra
Paris
Location, lieu, lieu habité, zone peuplée
Paris (prononcé [pa.ʁi]) est la capitale de la France. Elle se situe au cœur d'une vaste plaine fertile au climat tempéré, le Bassin parisien, sur une boucle de la Seine, entre les confluents de celle-ci avec la Marne et l'Oise. Ses habitants s'appellent les Parisiens.Paris est également le chef-lieu de la région Île-de-France et l'unique commune française qui est en même temps un département. Comme les villes de Lyon et de Marseille, elle est divisée en arrondissements (au nombre de vingt).
dbpedia rdf.freebase.com/ns/m.05qtj fr.wikipedia.org/wiki/Paris
Leaflet | © OpenStreetMap
Property:
Value:
dbpedia-owl:abstract :
Paris (prononcé [pa.ʁi]) est la capitale de la France. Elle se situe au cœur d'une vaste plaine fertile au climat

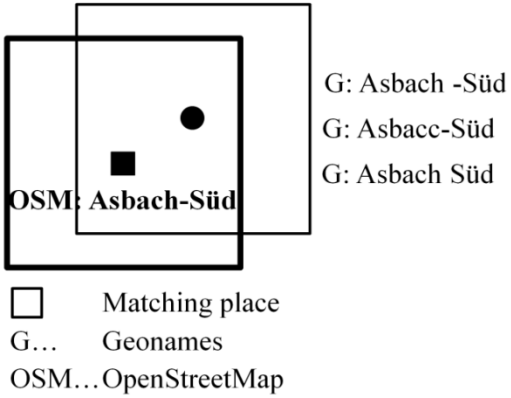
The Geoweb

Different vocabularies for the representation of spatial references

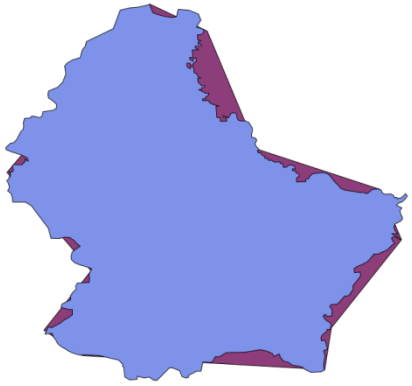


Spatial references as an interlinking Criterion

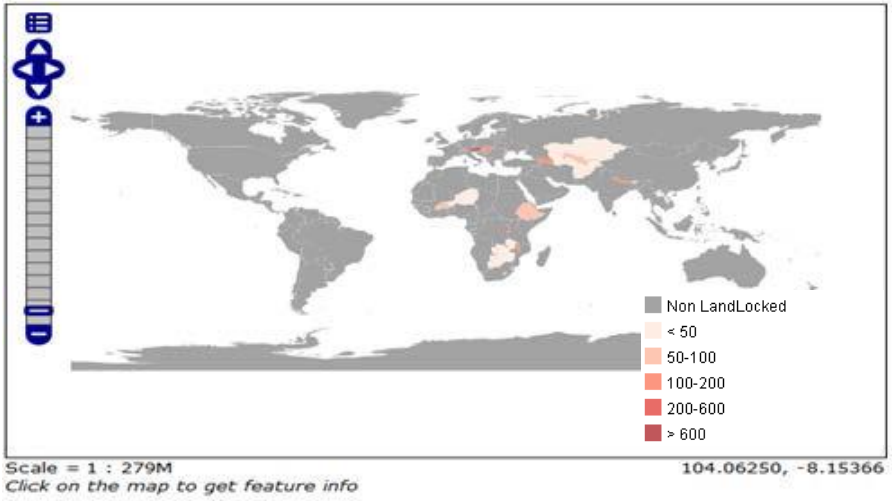
Many state of the art approaches are based on the spatial criterion for interlinking data



source: Hahmann and Burghardt (2010)



source: Salas and Harth (2011)

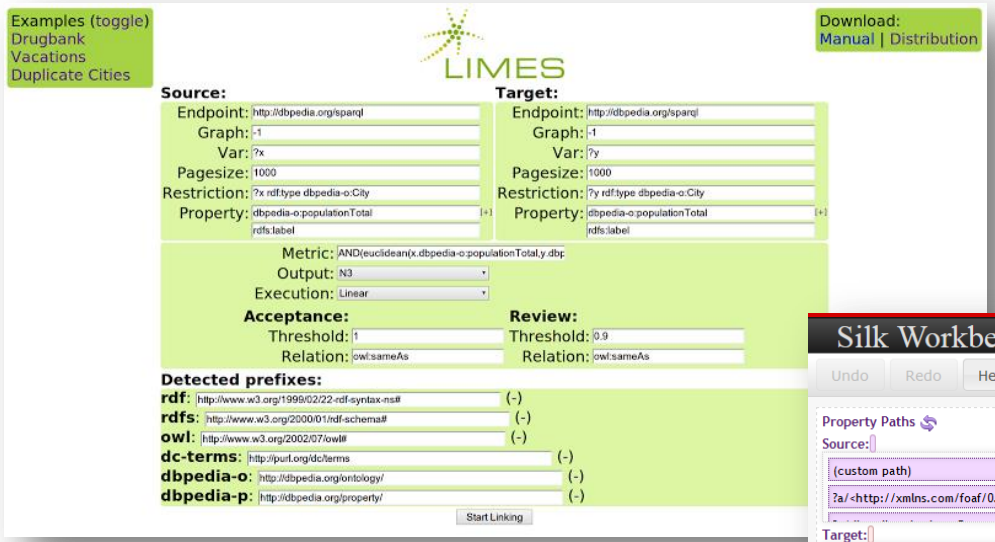


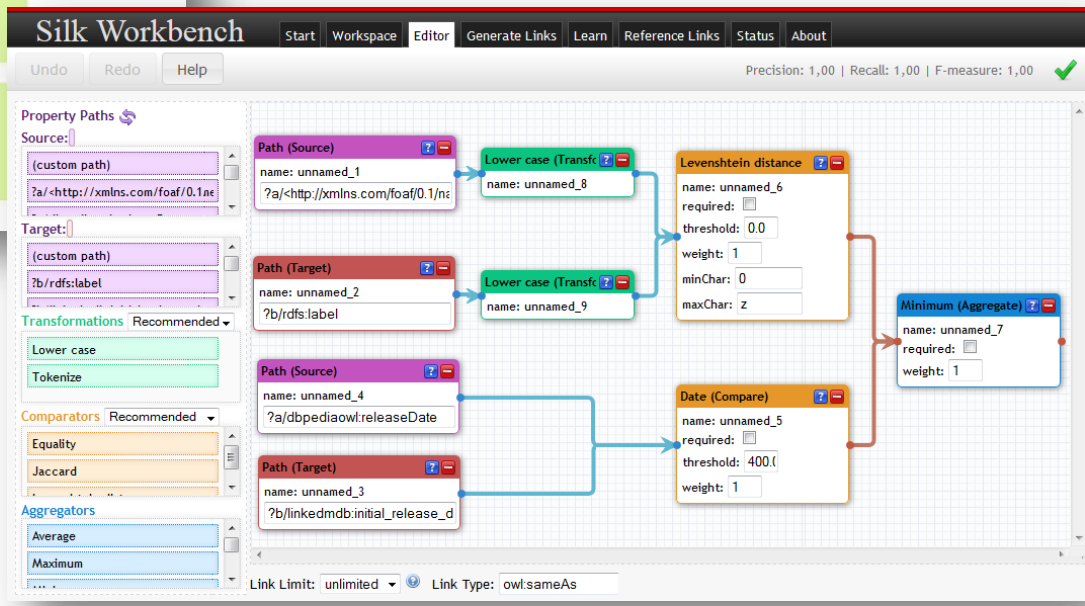
source: Owusu-Banahene and Coetzee (2013)

Spatial references as an interlinking Criterion

Spatial criterion may be used as part of more general multicriteria approaches

LIMES: LInk discovery framework for MEtric Spaces

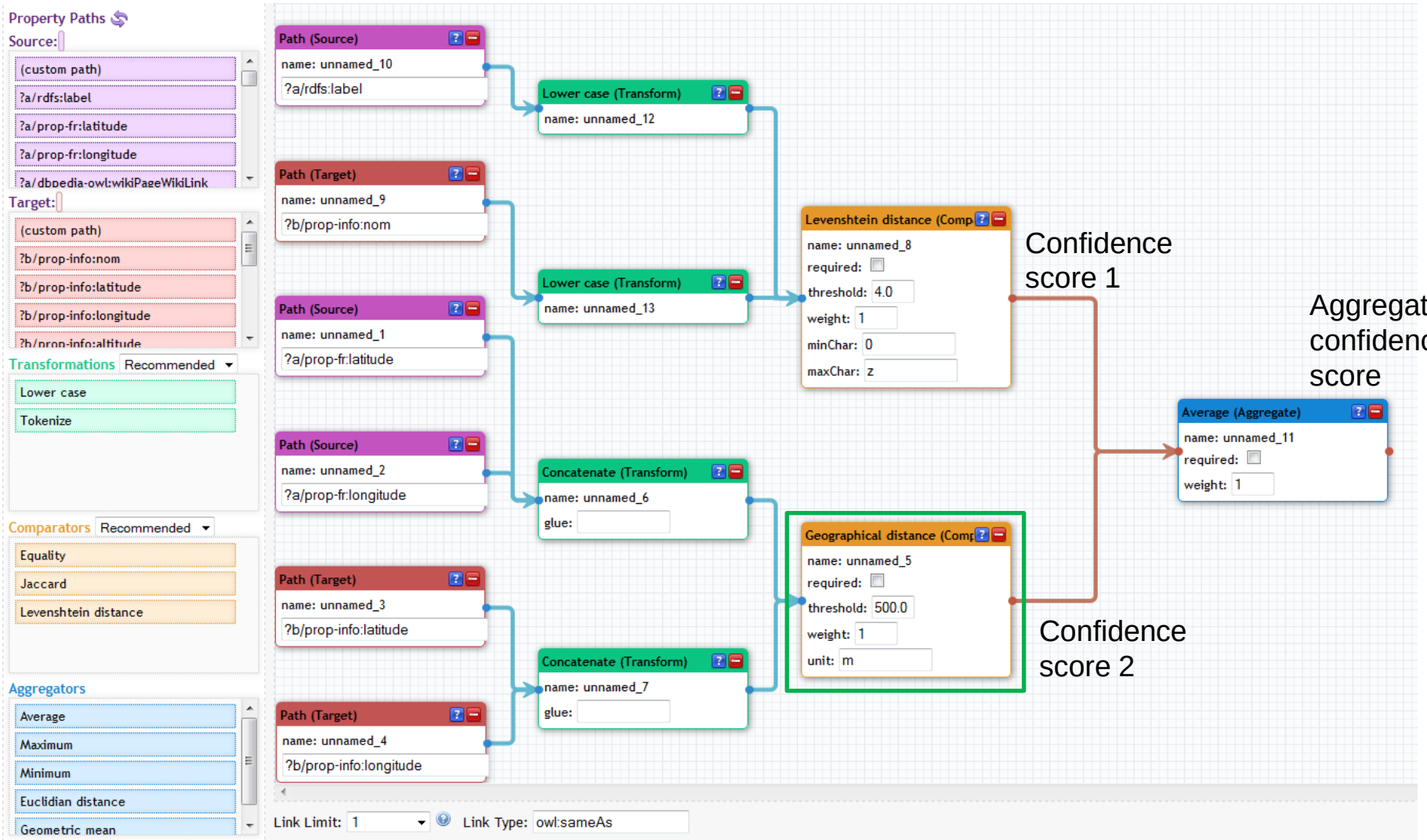




Silk Link Discovery Framework

Spatial references as interlinking Criterion

Each pair of matching candidates may include a spatial comparison



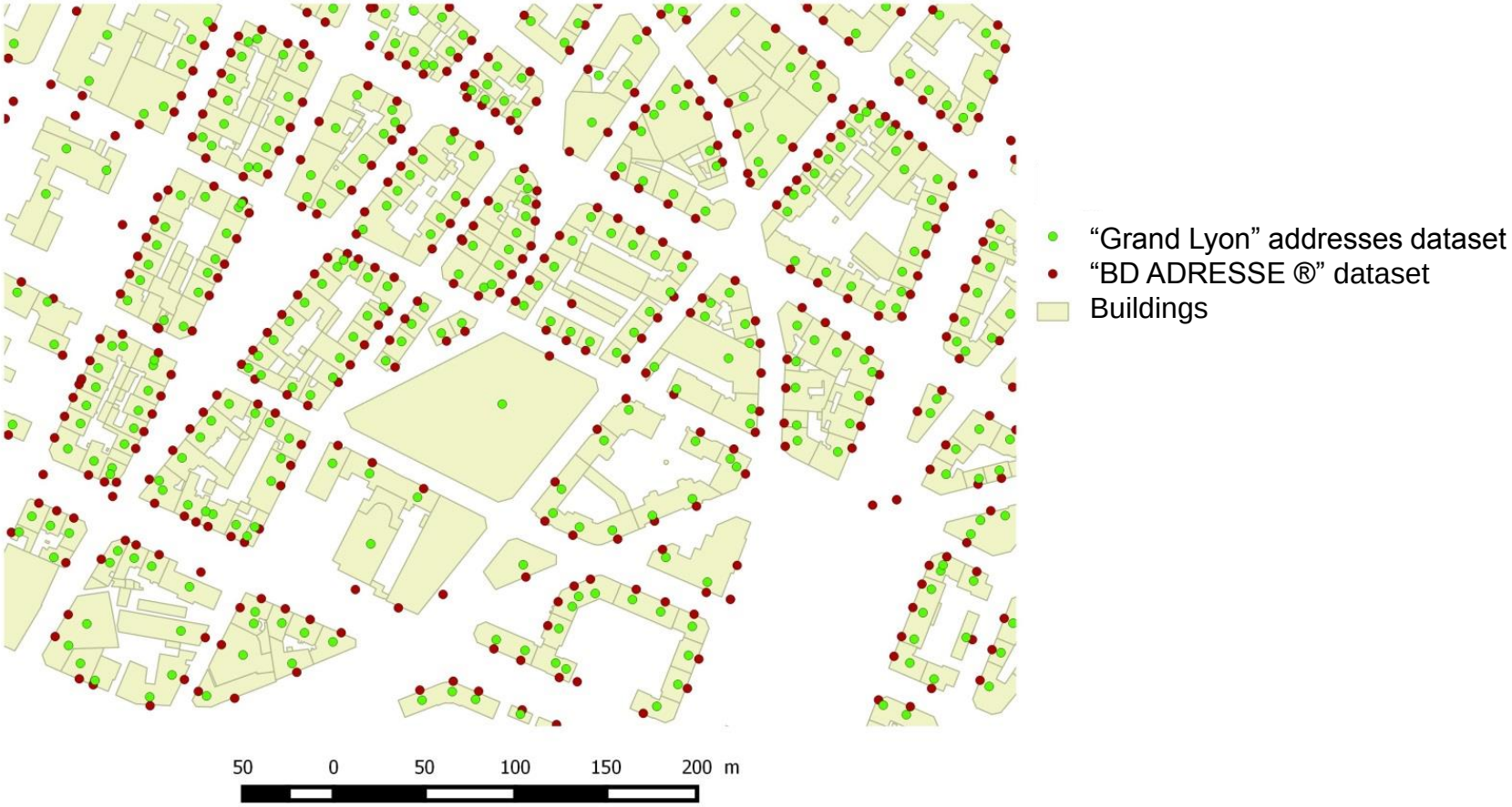
An example of a linking configuration using Silk Link Discovery Framework

Challenges related to the spatial criterion

- The spatial references present some heterogeneities that need to be handled in order to reliably use spatial criterion for interlinking

Challenges related to the spatial criterion

- Different data capture rules from one source to another



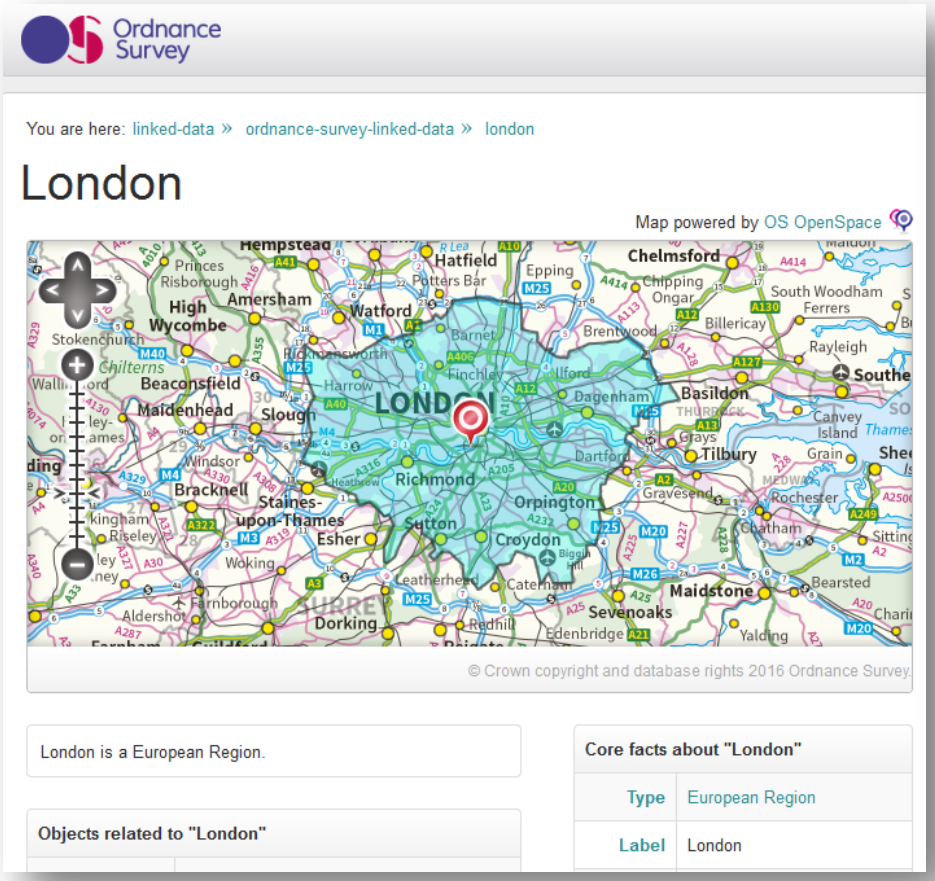
Example of addresses of the city of Lyon in two data sources

Challenges related to the spatial criterion

- Difference levels of positional accuracy

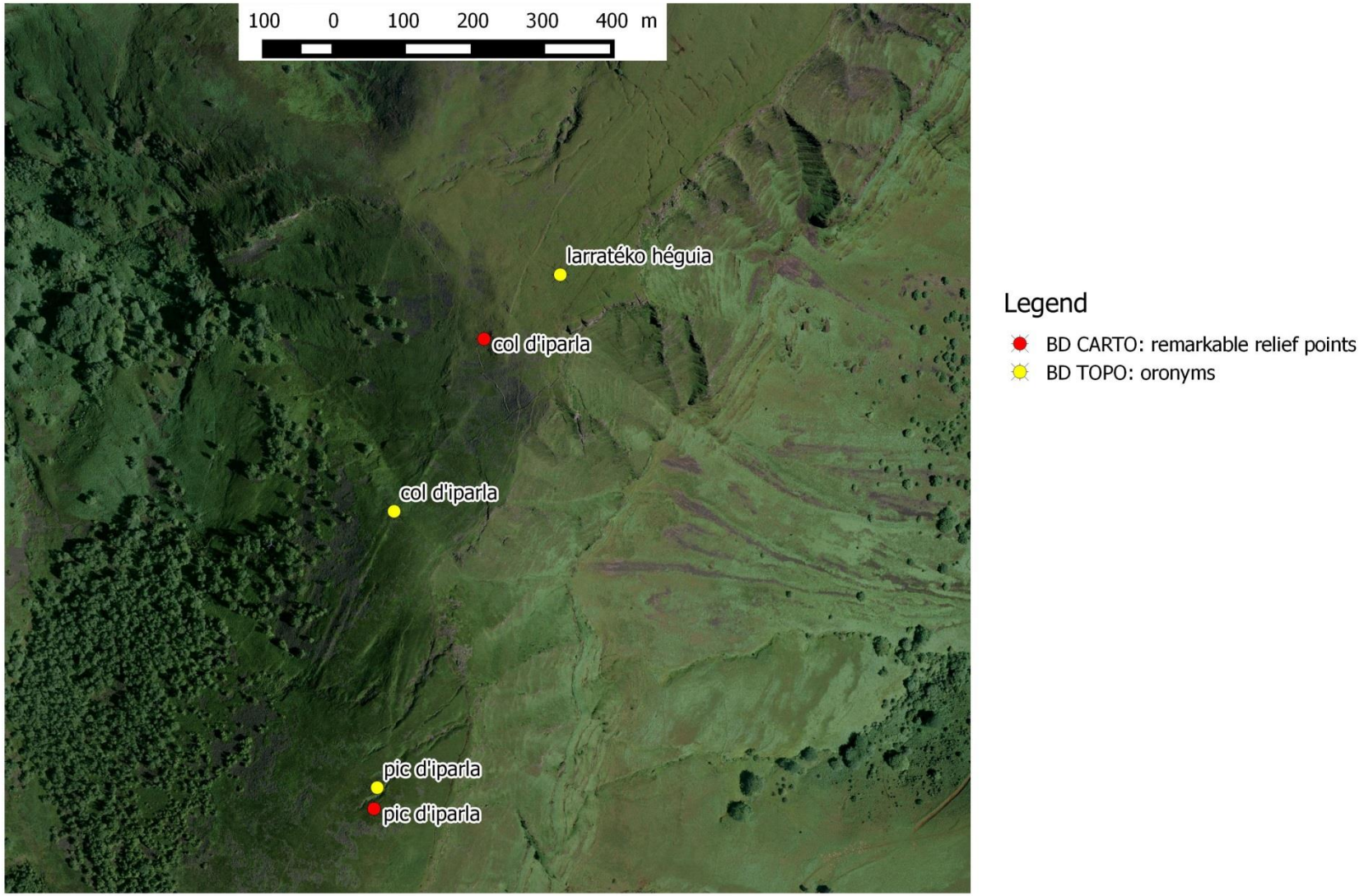
Challenges related to the spatial criterion

- Different levels of details



Challenges related to the spatial criterion

- Vagueness of some geographic entities



Proposition

• The heterogeneities of spatial references may make them not very helpful for understanding and interlinking the data

• We identify the main elements that allow representing the meaning of a spatial reference (the XY semantics)

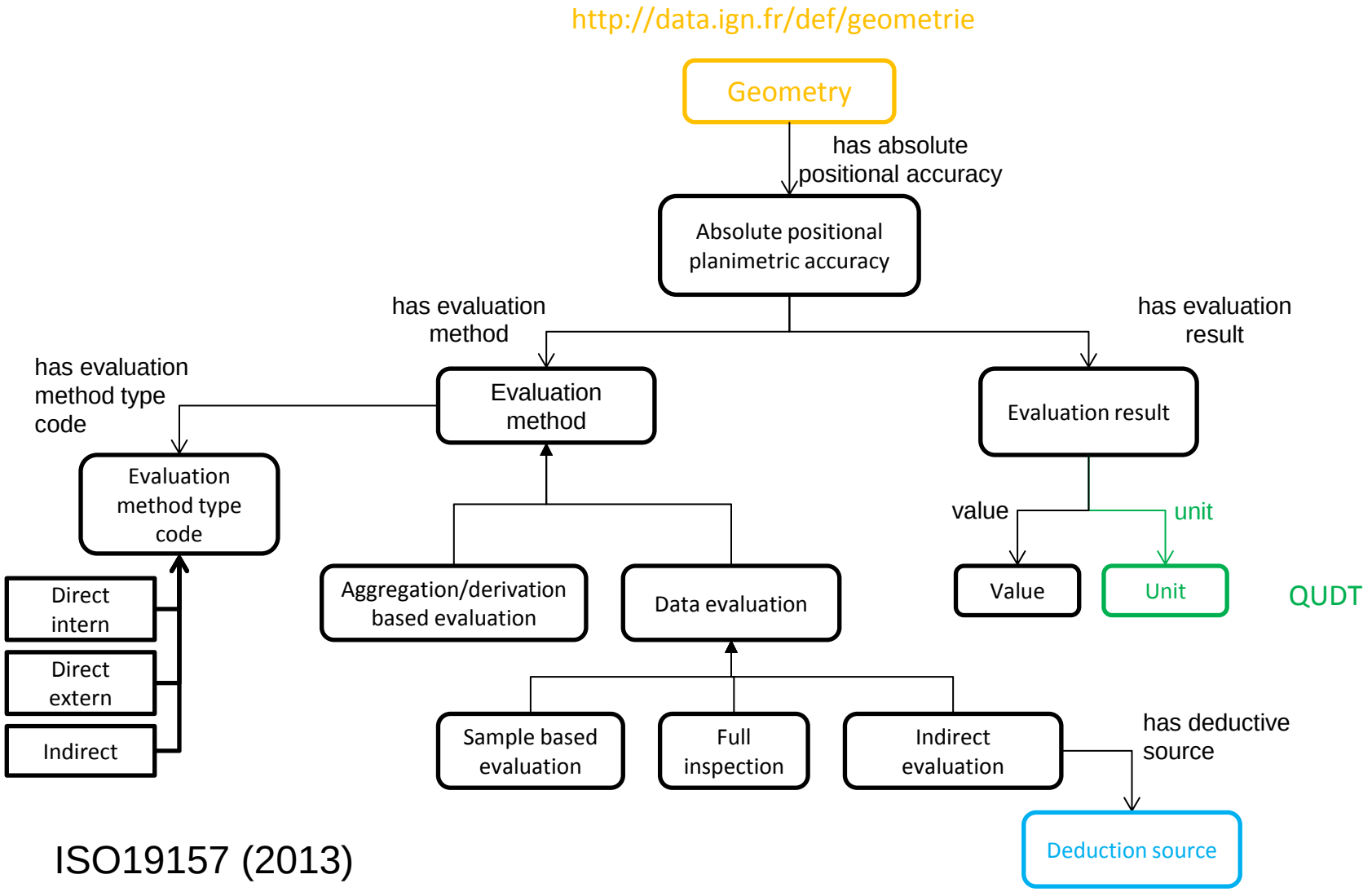
• We suggest to formally represent the elements that allow a better understanding of the spatial references.

Planimetric accuracy

Geometric modelling

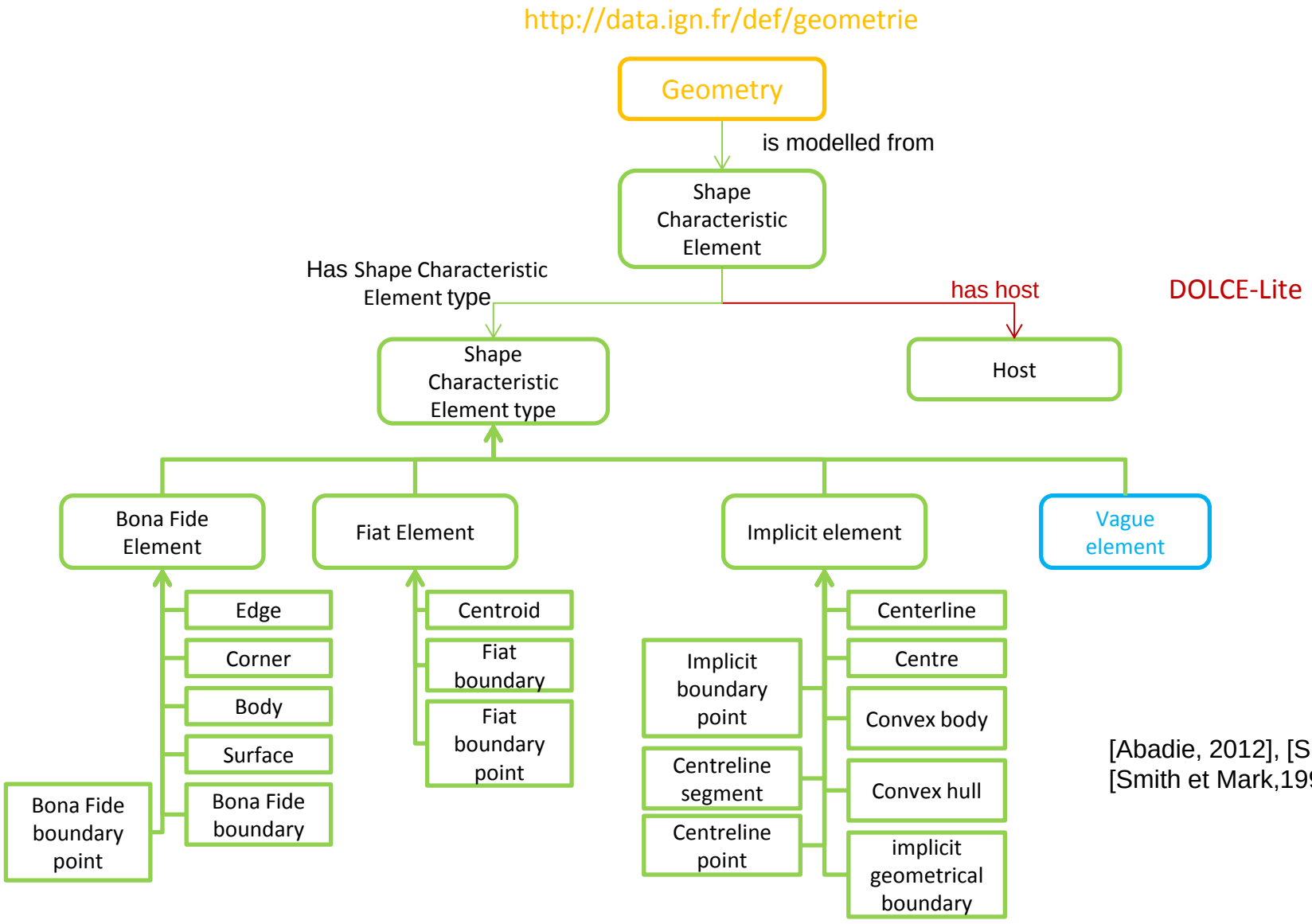
Vague aspect of some geographic entities

Representing the planimetric accuracy of a spatial reference



ISO19157 (2013)

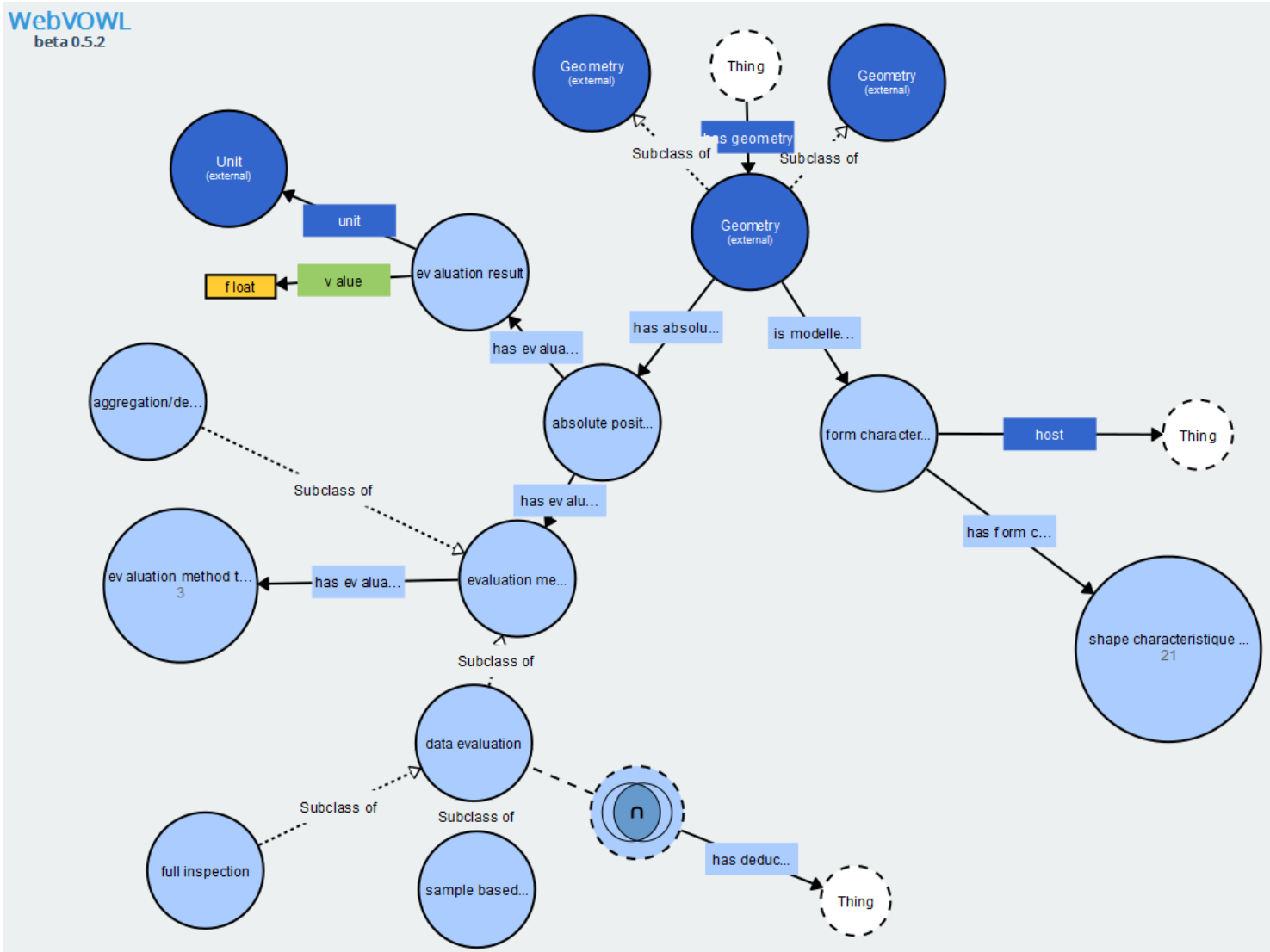
Representing the geometric modelling and the vagueness of the spatial references



[Abadie, 2012], [Shade,2010] et [Smith et Mark,1998]

Published OWL vocabulary

http://data.ign.fr/def/xysemantics



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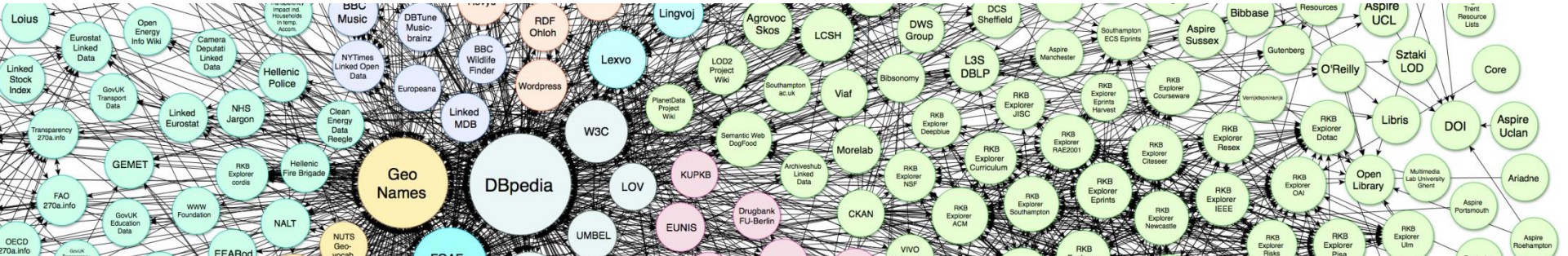
le cnam Cédric

Thank you