

Adding **custom search engines**  
to **OpenLayers** with

**OpenSearch-geo**



FOSS4G 2010  
*Barcelona*

oscar.fonts



UNIVERSITAT  
JAUME·I



Disponibile la descàrrega del Model d'Elevacions del Terreny 15 x 15

Basic cartography

Additional information

- Series sheets 1:5 000
- Series sheets 1:10 000
- Series sheets 1:25 000
- Sheets from MTN50
- Flight and edition date
- Toponymy

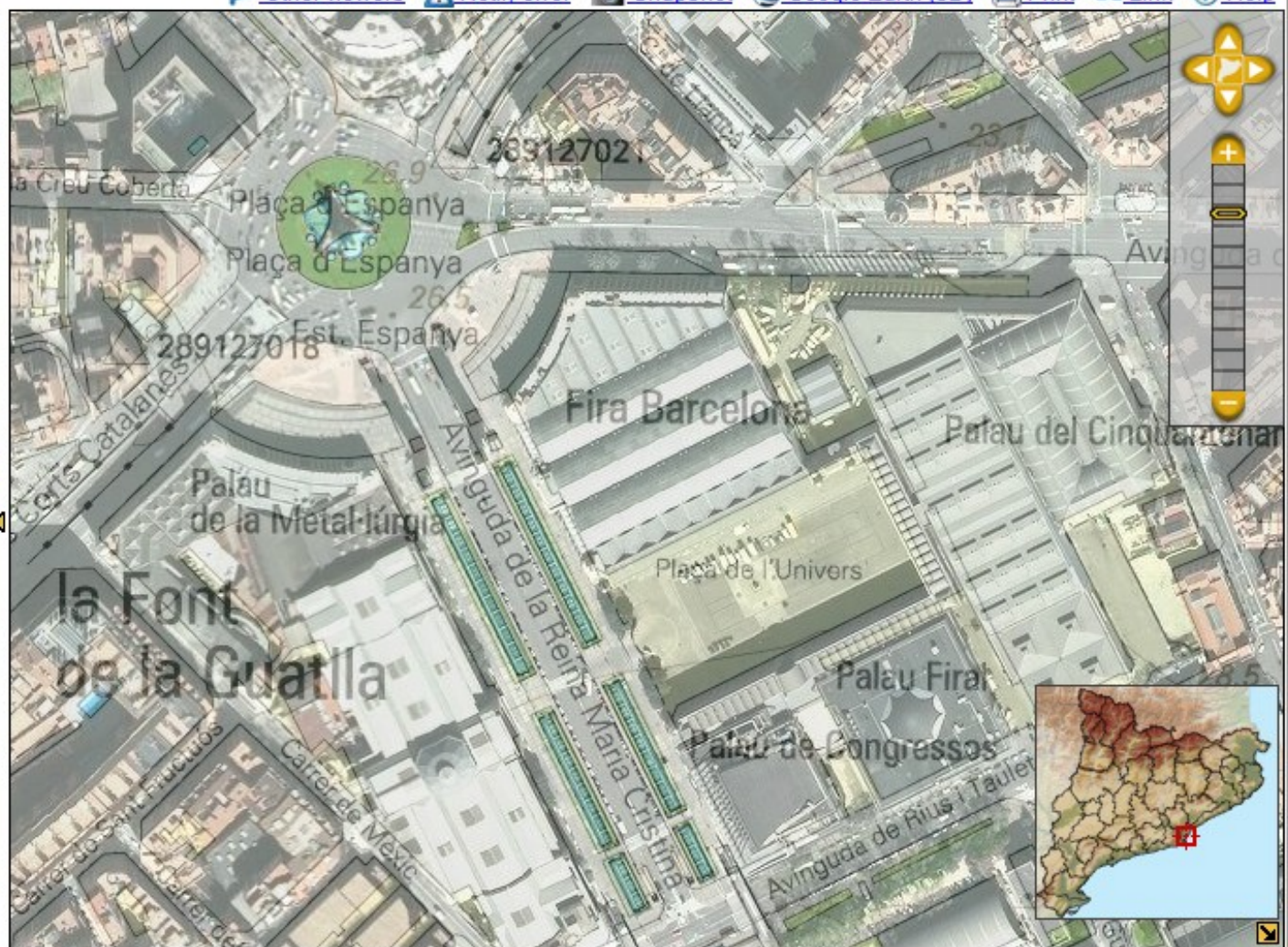
Measure and edition tools

Search

Type in the text to search:  
**Place name.** Ex: Vic  
**Street.** Ex: Vic, Pare Coll 11  
**UTM.** (ED50) Ex: 438300, 4642360  
**Longitude, latitude.** (GPS)  
 Ex: 2.254689, 41.92894 [G°M'S°](#)  
**Punt kilomètric.** Ex: C-25, 143

Palau de Congressos

- Palau de Congressos
- Palau de fires i congressos
- Palau de Congressos de Catalunya
- Palau de Congressos
- Towns: Barcelona.
- Counties: Barcelonès.



# Geo Search

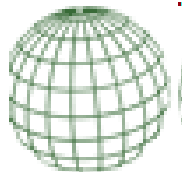
Google™  
Maps

Open?

Simple?



CSW, CQL,  
WFS filters,  
WMS+SLD,  
LBS,  
WPS



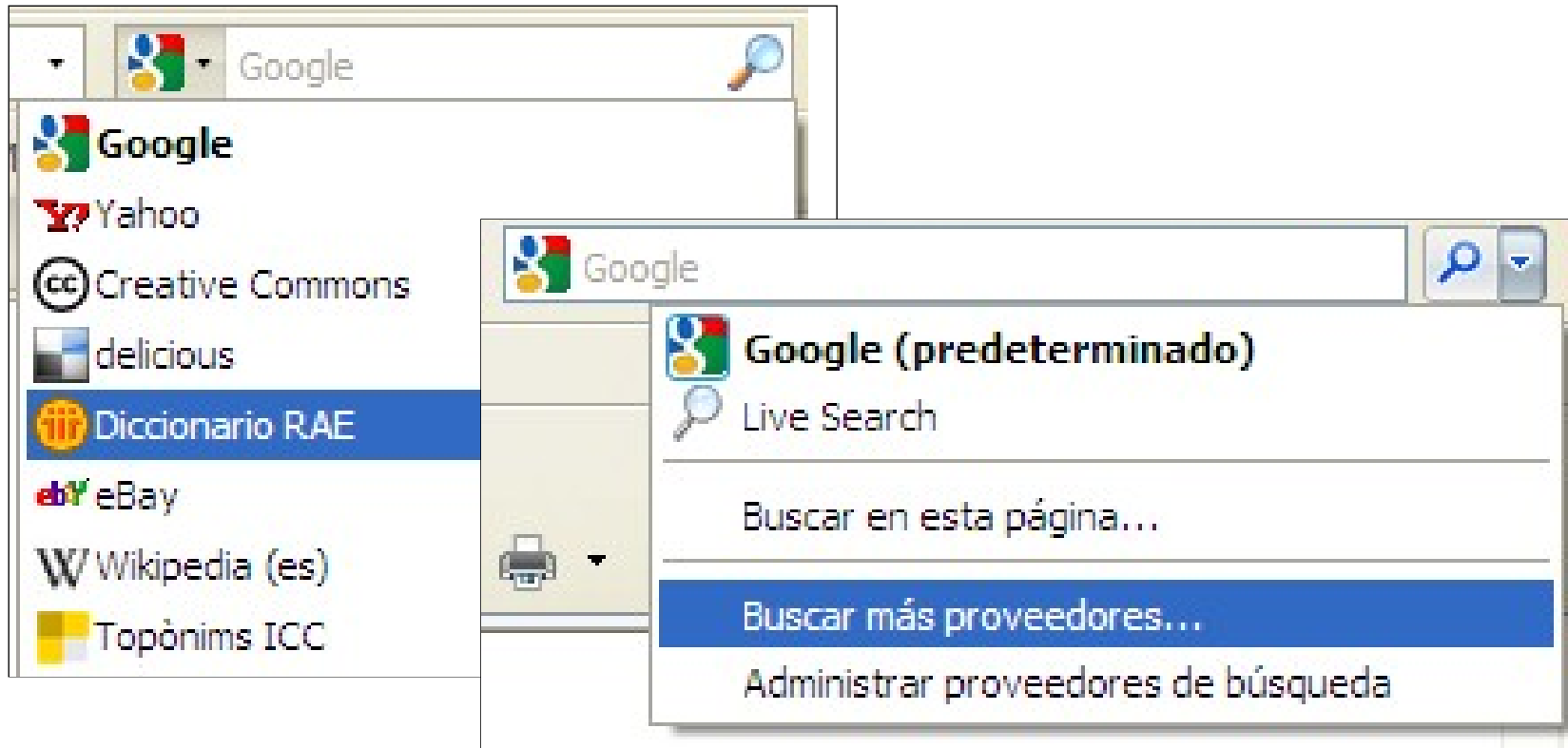
flickr

Interoperable?

$\Leftarrow$  Geo  $\Rightarrow$



# Custom Search

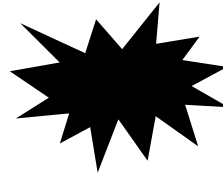


1,000s of **OpenSearch**-based custom search engines

# OpenSearch

<http://www.opensearch.org>

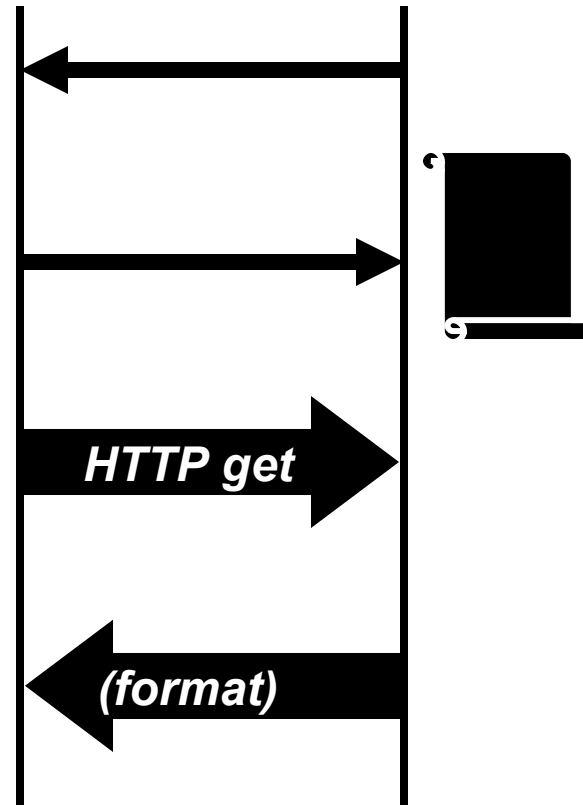
1. Discovery



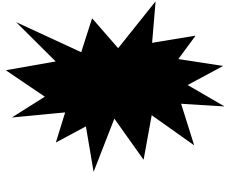
2. Description

3. Request

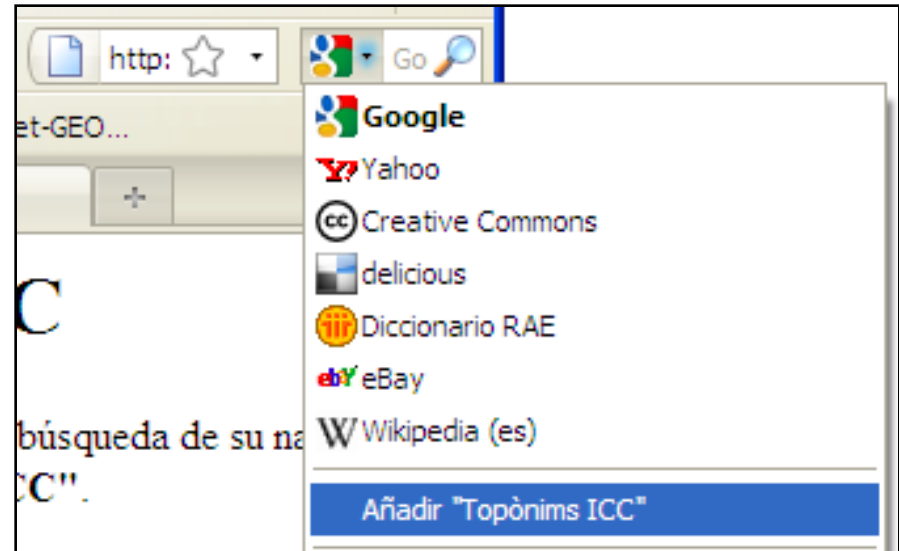
4. Response



# OpenSearch



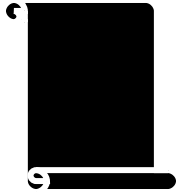
## 1. Discovery



```
<html>
<head>
  <link rel="search"
        type="application/opensearchdescription+xml"
        title="My Custom Search Engine"
        href="MySearcherDescription.xml">
  [...]

```

# OpenSearch



## 2. Description

```
<OpenSearchDescription xmlns="...">
```

```
[...]
```

```
<Url type="text/html" template="http://...search?  
text={searchTerms}" />
```

```
[...]
```



# OpenSearch

*get*

## 3. Request

URL Template: `http://...search?q={searchTerms}`

FOSS4G Barcelona\_

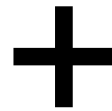


HTTP GET: `http://...search?q=FOSS4G%20Barcelona`

# OpenSearch



4. Response



**ns:OpenSearch**

**ns:Atom**

**HTML**

**JSON**

**RSS**

**Atom**

**$\Rightarrow$  Geo  $\Leftarrow$**

# Geo OpenSearch

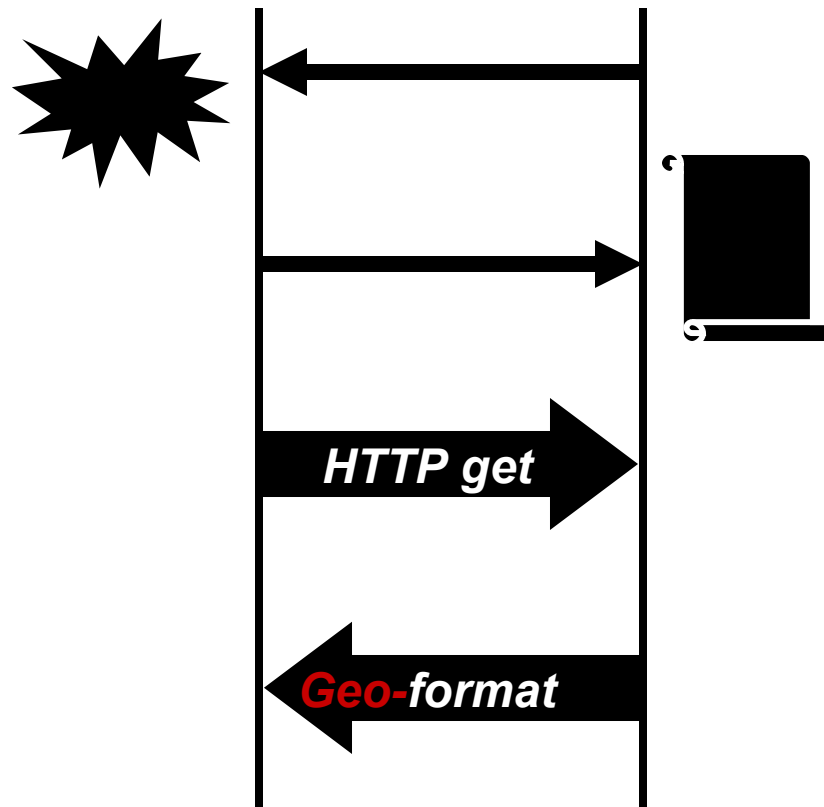
[http://www.opensearch.org/Specifications/OpenSearch/Extensions/Geo/1.0/Draft\\_1](http://www.opensearch.org/Specifications/OpenSearch/Extensions/Geo/1.0/Draft_1)

1. Discovery

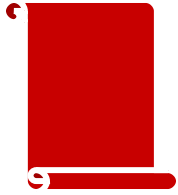
2. Description

3. Request

4. Response



# Geo OpenSearch

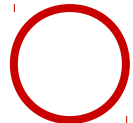


## 2. Description

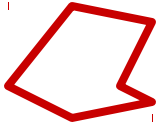
```
xmlns:geo="http://a9.com/-/opensearch/extensions/geo/1.0/"
```



{geo:box?}



{geo:lat?} {geo:lon?} {geo:radius?}



{geo:polygon?}

**TXT**

{geo:locationString?}

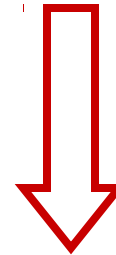
# Geo OpenSearch



*get*

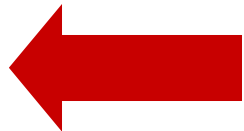
## 3. Request

URL Template: **http://...?bbox={geo:box?}**

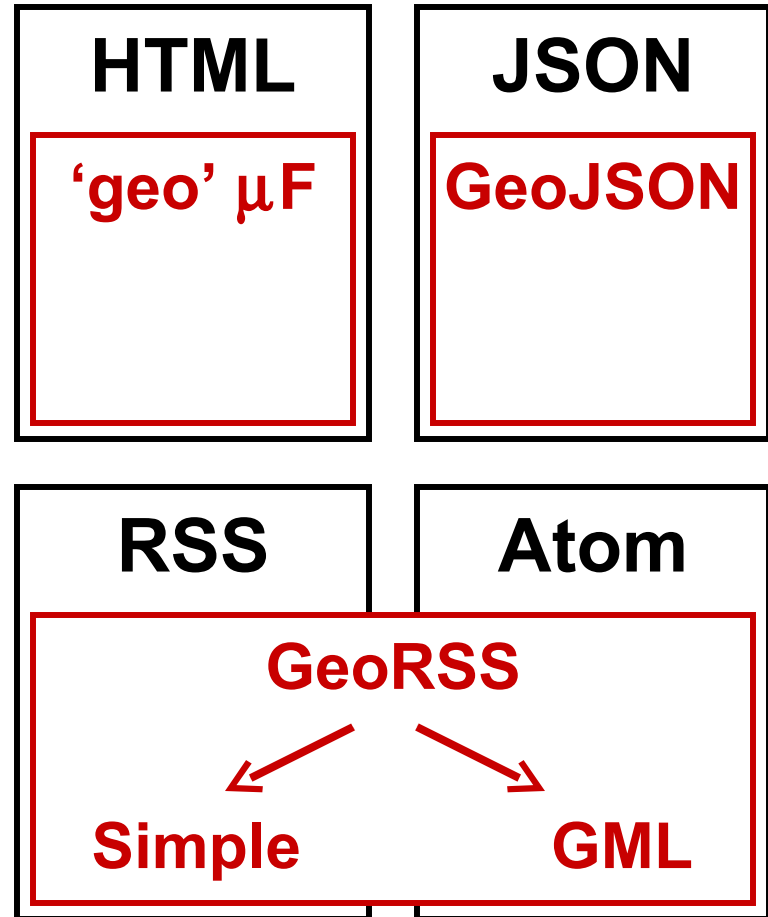
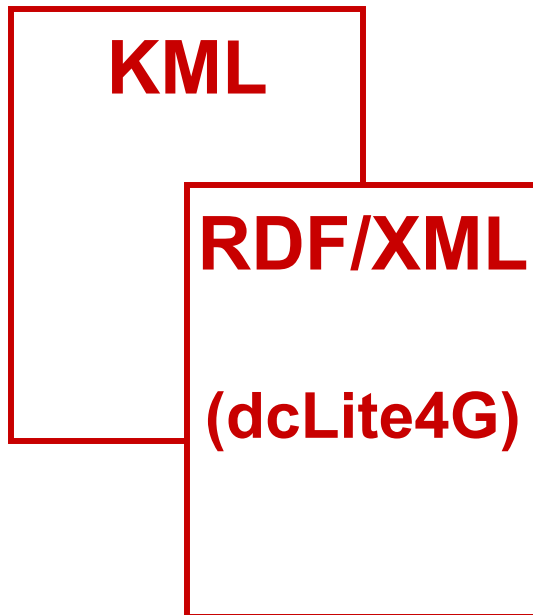


HTTP GET: **http://...?bbox=-180,-90,180,90**

# Geo OpenSearch



## 4. Response





# Implementations

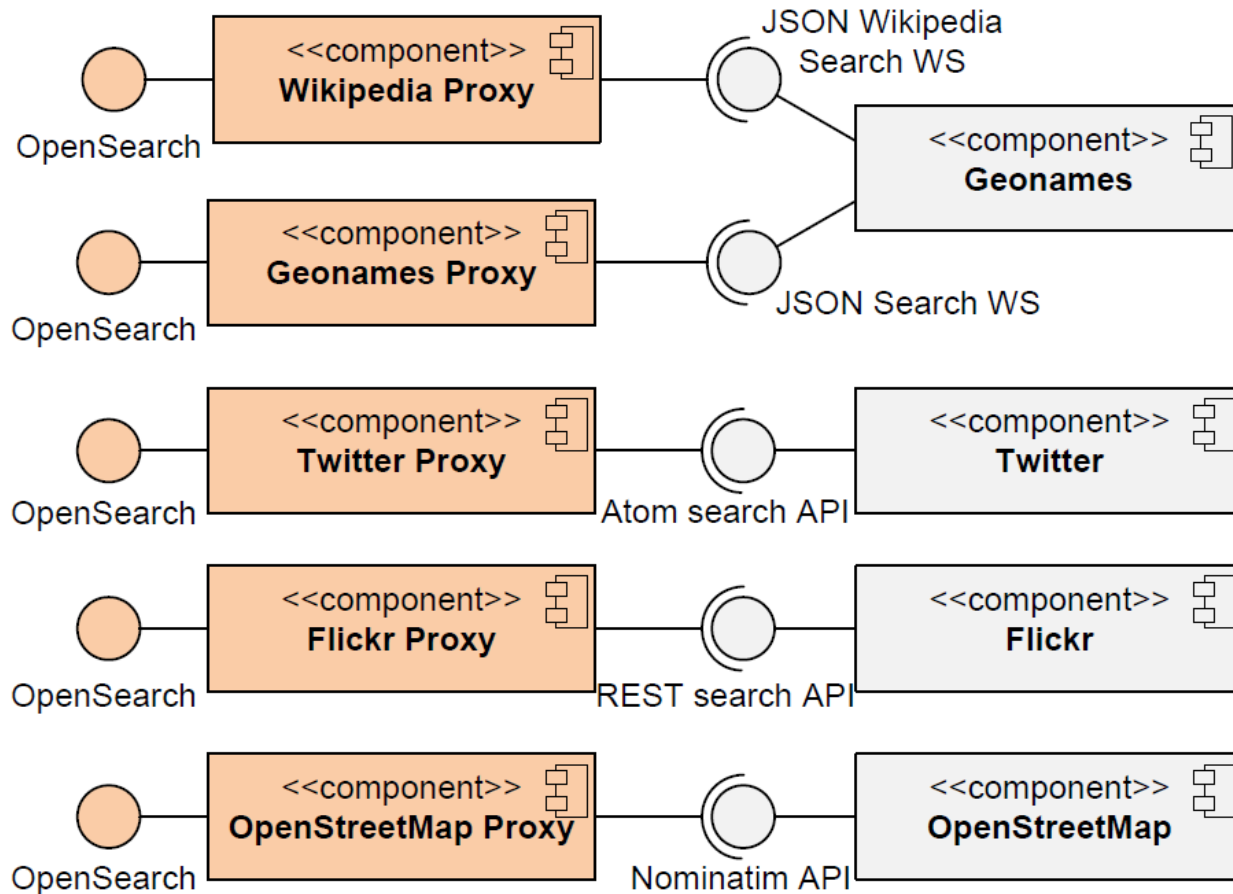
## Services:

- **Geocommons**
- **Duetopia (GENESI-DR)**
- **Geonetwork ?**

## Clients:

- ?

# Implementations



# OpenLayers.Control.OpenSearch

## OpenLayers.Format.OpenSearchDescription

- Description document parser

## OpenLayers.Strategy.OpenSearch

- Automatic. choose best resp. format
- Manages search params:
  - SearchTerms (text)
  - BBOX (geo)
- Constructs request URL

## OpenLayers.Control.OpenSearch

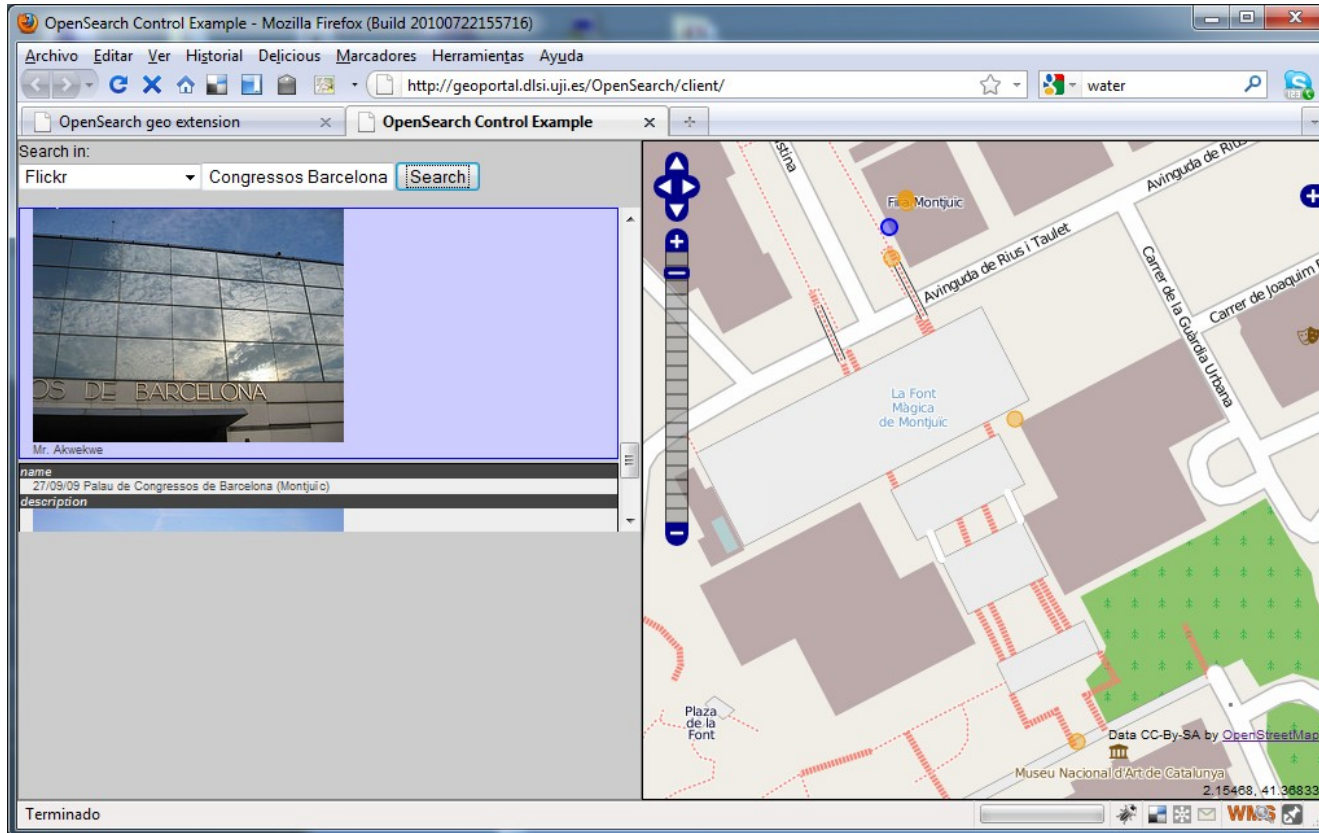
- Orchestrates (multiple) strategies
- User interface:
  - Search form
  - Text results
- Fires 'search' event

OpenLayers.Format.KML

OpenLayers.Format.GeoJSON

OpenLayers.Format.Atom

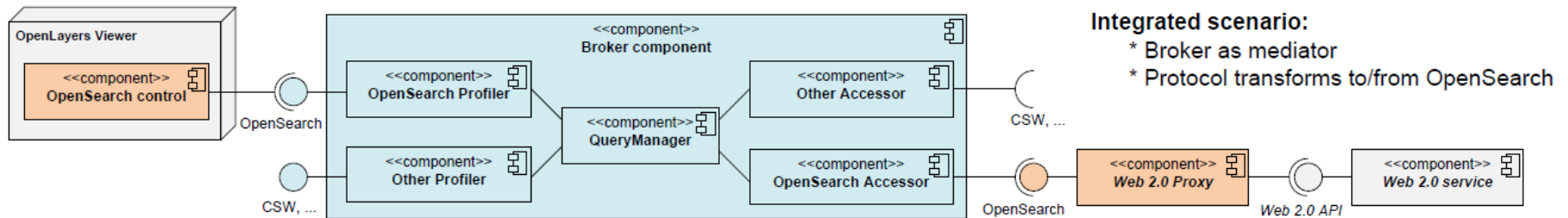
# Demo



<http://geoportal.dlsi.uji.es/OpenSearch/client/>

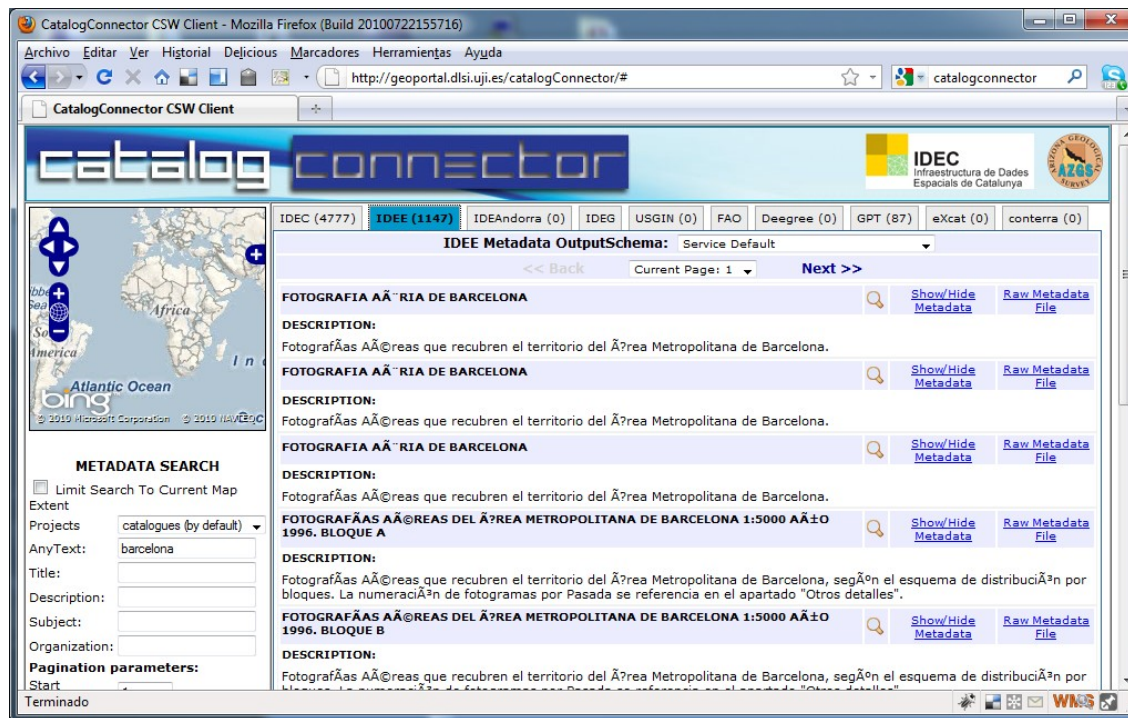
# Catalog integration

## OpenSearch & geoweb in GI-Cat



# Catalog integration

CatalogConnector → see P-046 poster



<http://geoportal.dlsi.uji.es/catalogConnector/OpenSearchExample.jsp>

# Done

- Generic OpenSearch-geo client.
- Many geoweb services wrapped.
- Play with catalog-level integration (CSW).

# TODO

- Manage paged results in OpenLayers.
- Play with Feature-level searches (WFS?).
- Generic OpenSearch-geo client 4 java.



?

<http://groups.google.com/group/opensearch>

<http://geoportal.dlsi.uji.es/OpenSearch/>

[oscar.fonts@gmail.com](mailto:oscar.fonts@gmail.com)