W3C Annotations applied to INSPIRE data

Standards and prototype

INSPIRE 2018 Conference
Antwerpen, Sep 19th, 2018

Philippe Duchesne, HighLatitudes
@pduchesne

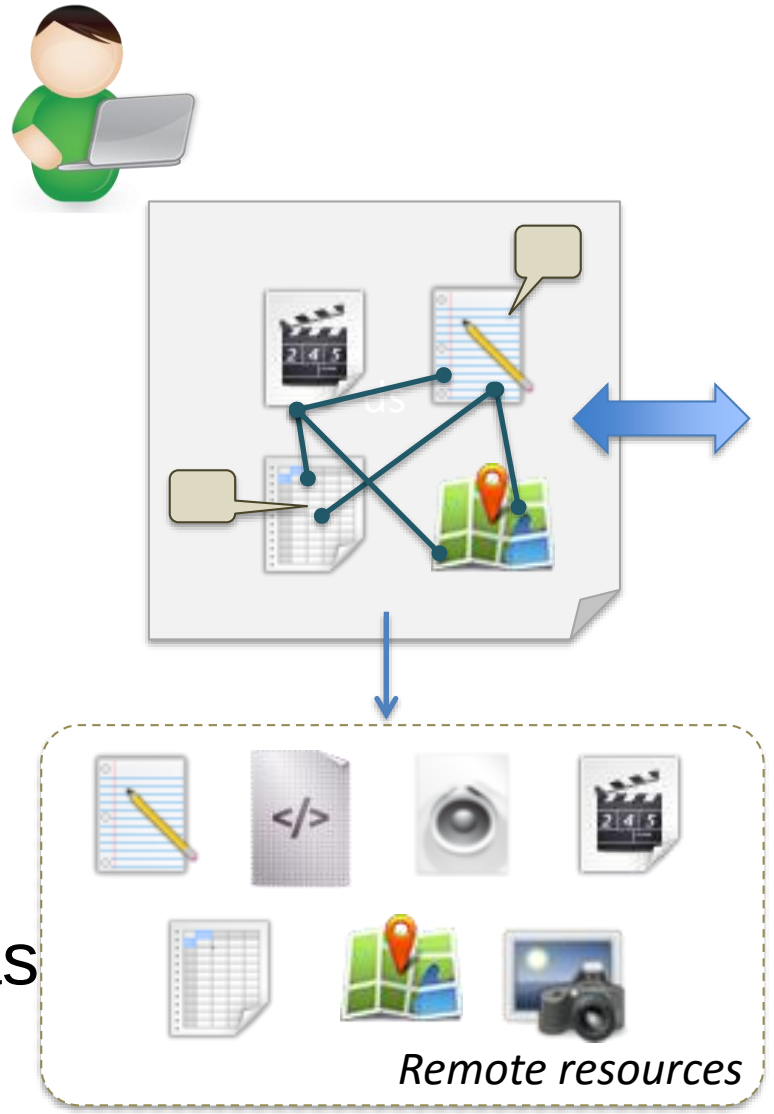
Background

Context: annotate and mash up governmental open data, creating so-called “data mosaics”

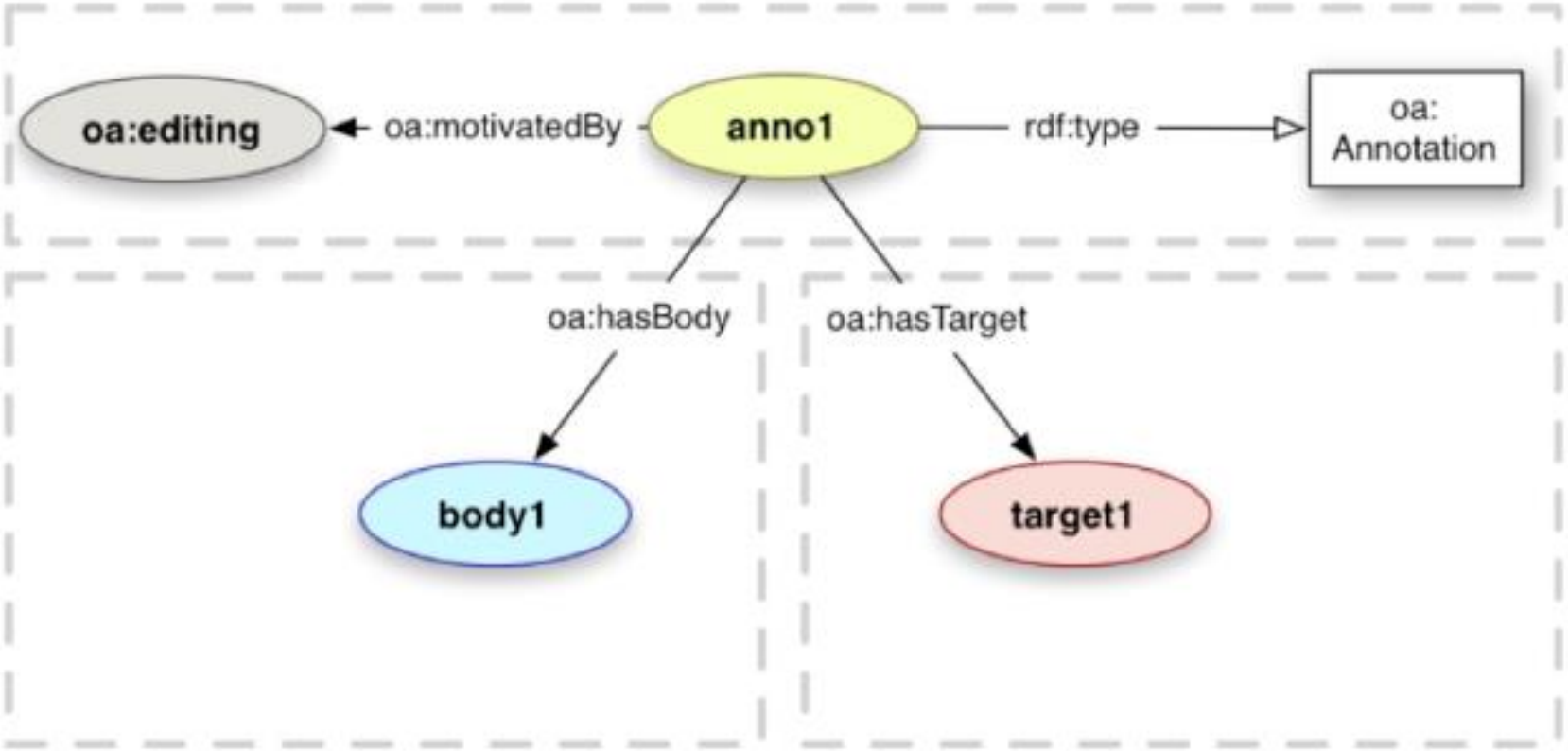
Background

Problem: when collating hypermedia resources, data curators face issues such as

- not owning referred data sources
- need resources identified by URIs
- need to organize
  annotate
  store
  exchange
  the result of their curation as a resource of its own



W3C Web Annotations : Basic data model

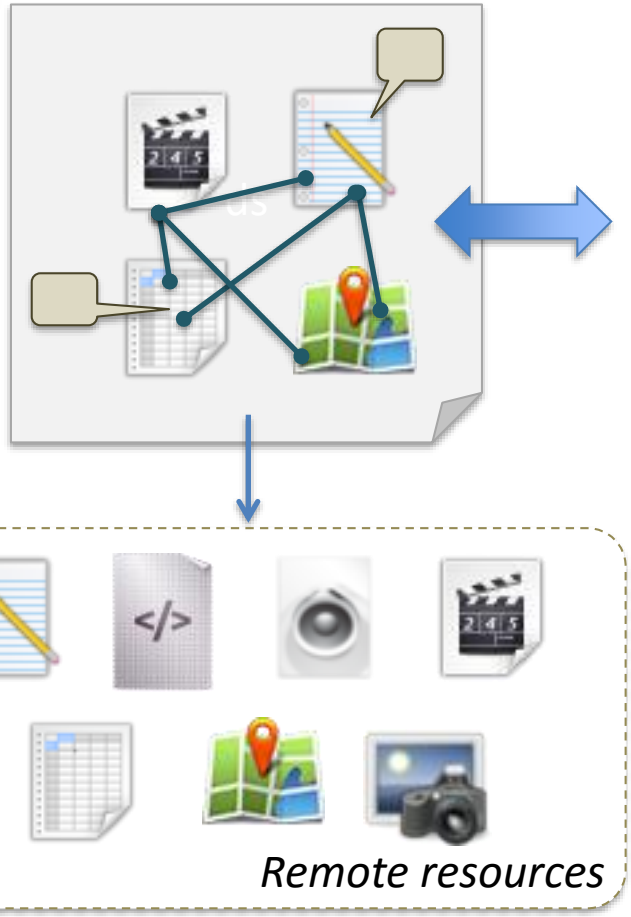


Hypermedia fragments

Problem: when collating hypermedia resources, data curators face issues such as

- not owning referred data sources
- need resources identified by URIs
- need to organize
  annotate
  store
  exchange

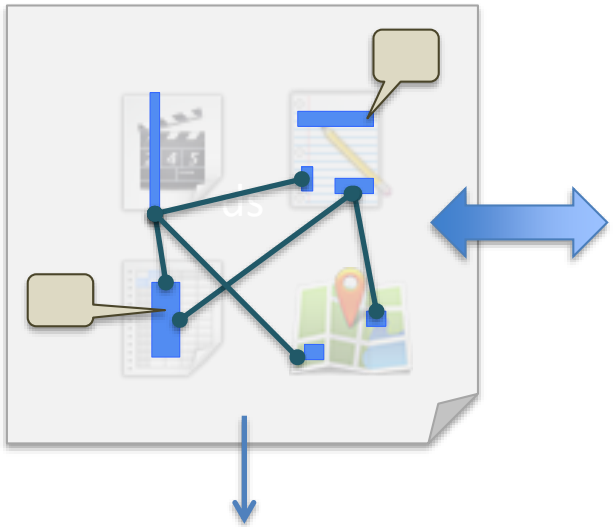
  the result of their curation as a resource of its own



Hypermedia fragments

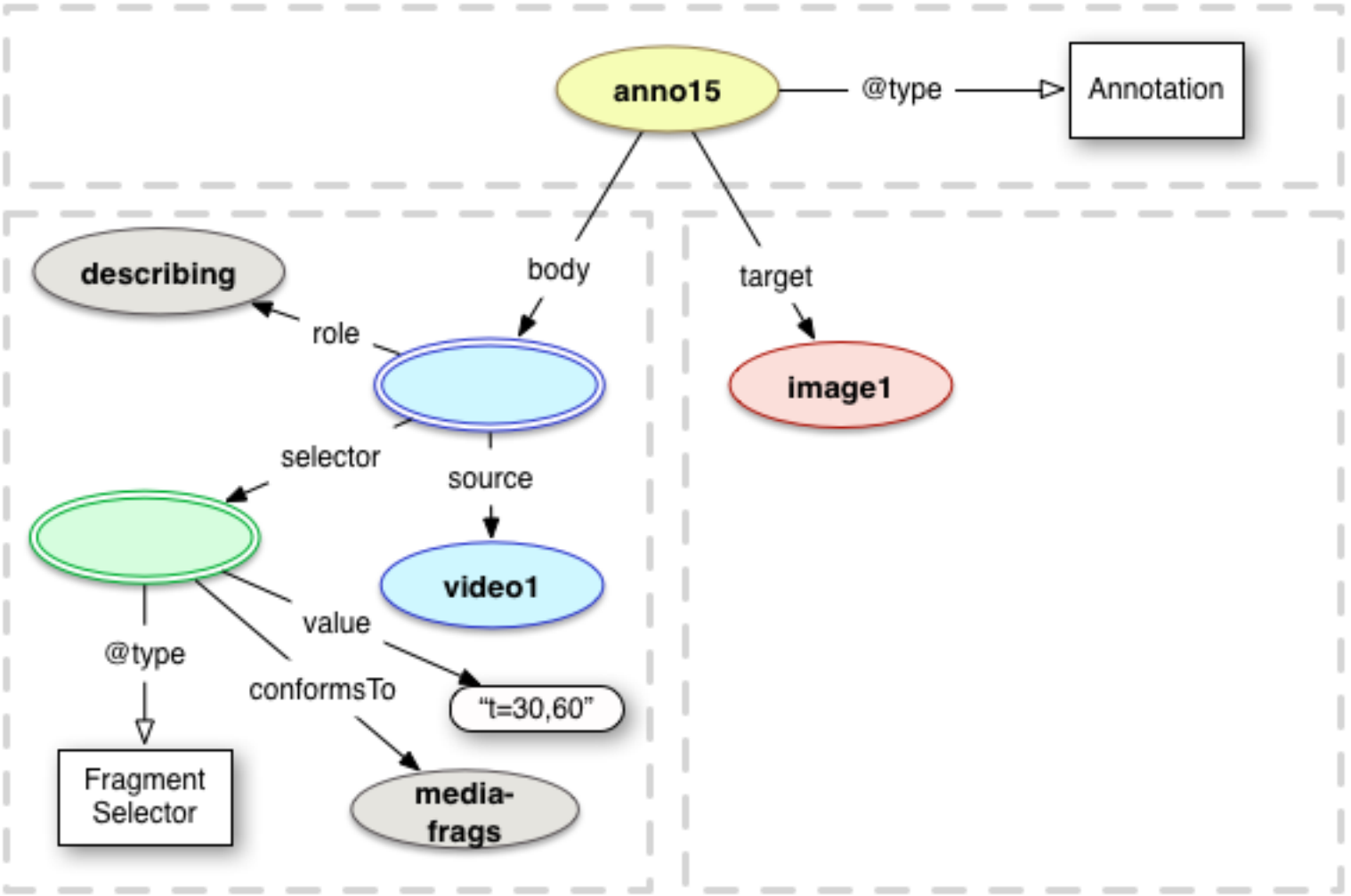
Problem: when collating hypermedia resources, data curators face issues such as

- not owning referred data sources
- need only parts of resources identified by URIs
- need to organize
  annotate
  store
  exchange
  the result of their curation as a resource of its own



Hypermedia fragments

W3C Web Annotations : URL fragment selector



Fragments of geodata

There are (de facto) fragments standards for several mime types (txt, csv, audio, pdf, …), for various dimensions (temporal, screen location, structural, …)

How about geospatial?

- Raster fragments

  `#bbox=…`

- Vector fragments

  `#id=[<collection>]/<FID>`

Fragments of geodata

- Service fragments

```
http://mywfs.com?request=GetFeature&
                  typename=type1&featureId=123
```

vs

```
http://mywfs.com#id=type1/123
```

- RESTful services : need for fragments ?

```
http://mywfs.com/collections/type1/features/123
```

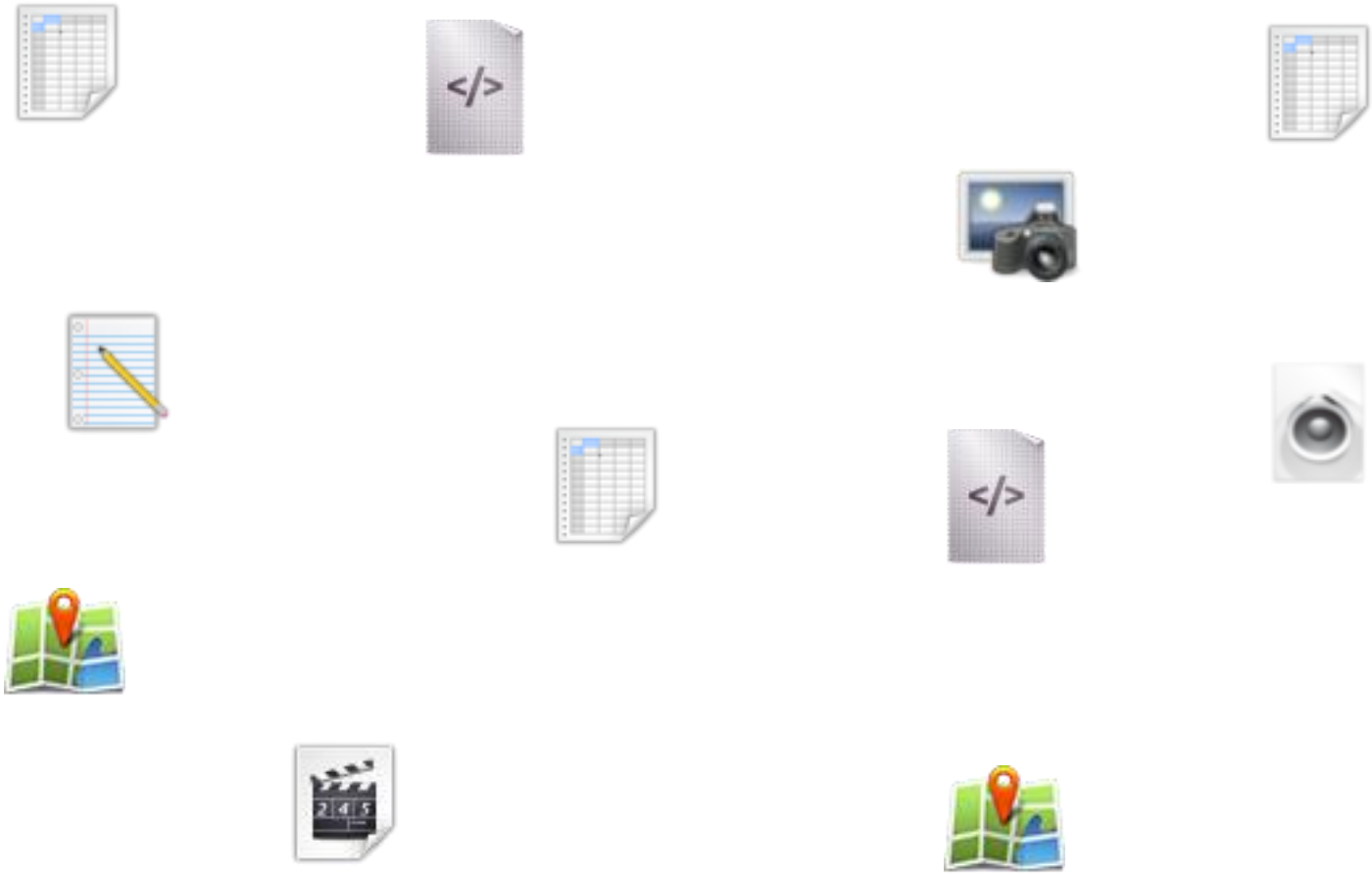
Sample annotation

```
{
  "type": "Annotation",
  "dc:title": ”WFS Feature Annotation",
  "target": {
    "source": "https://geoservices.informatievlaanderen.be
               overdrachtdiensten/RVV/wfs"
    "selector": {
      "type": "FragmentSelector”,
      "value": "id=RVV:Rvvnr/Rvvnr.228"
    }
  },
  "body": {
    "source": "https://data.highlatitud.es/sample.csv"
    "selector": {
      "type": "FragmentSelector",
      "value": "row=566&row=214"
    }
  }
}
```

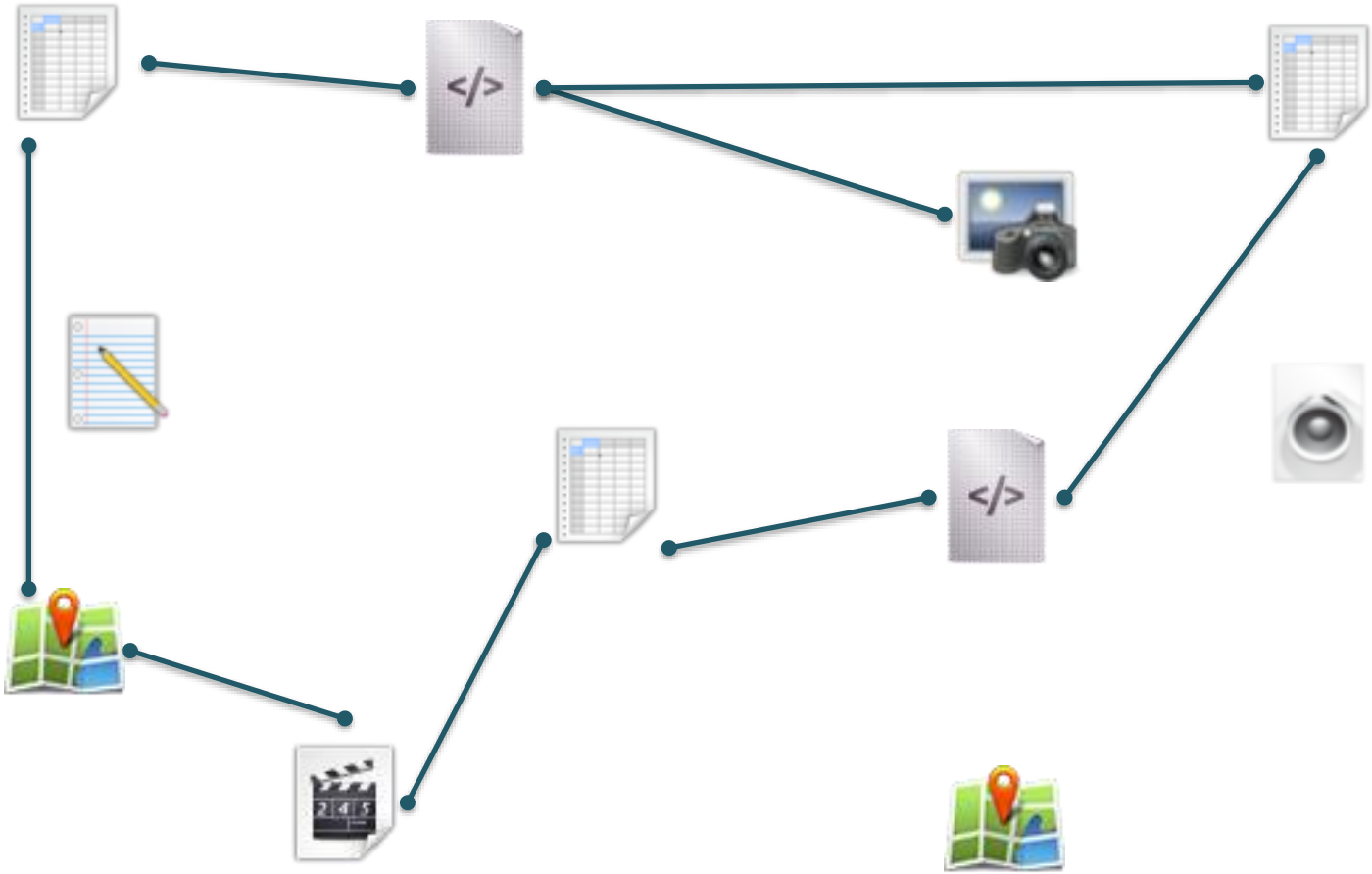
(Desirable) Constraints

- permanent URIs
  - Short of which, annotations do not constitute perennial knowledge
- mime type advertisement
  - If HTTP header is not reliable, annotations can embed dc:format
- W*S services ?
  - Capabilities endpoint should be reliably permanent
  - Invocation without params should return response (e.g. capabilities with `application/vnd.ogc.wms_xml`)

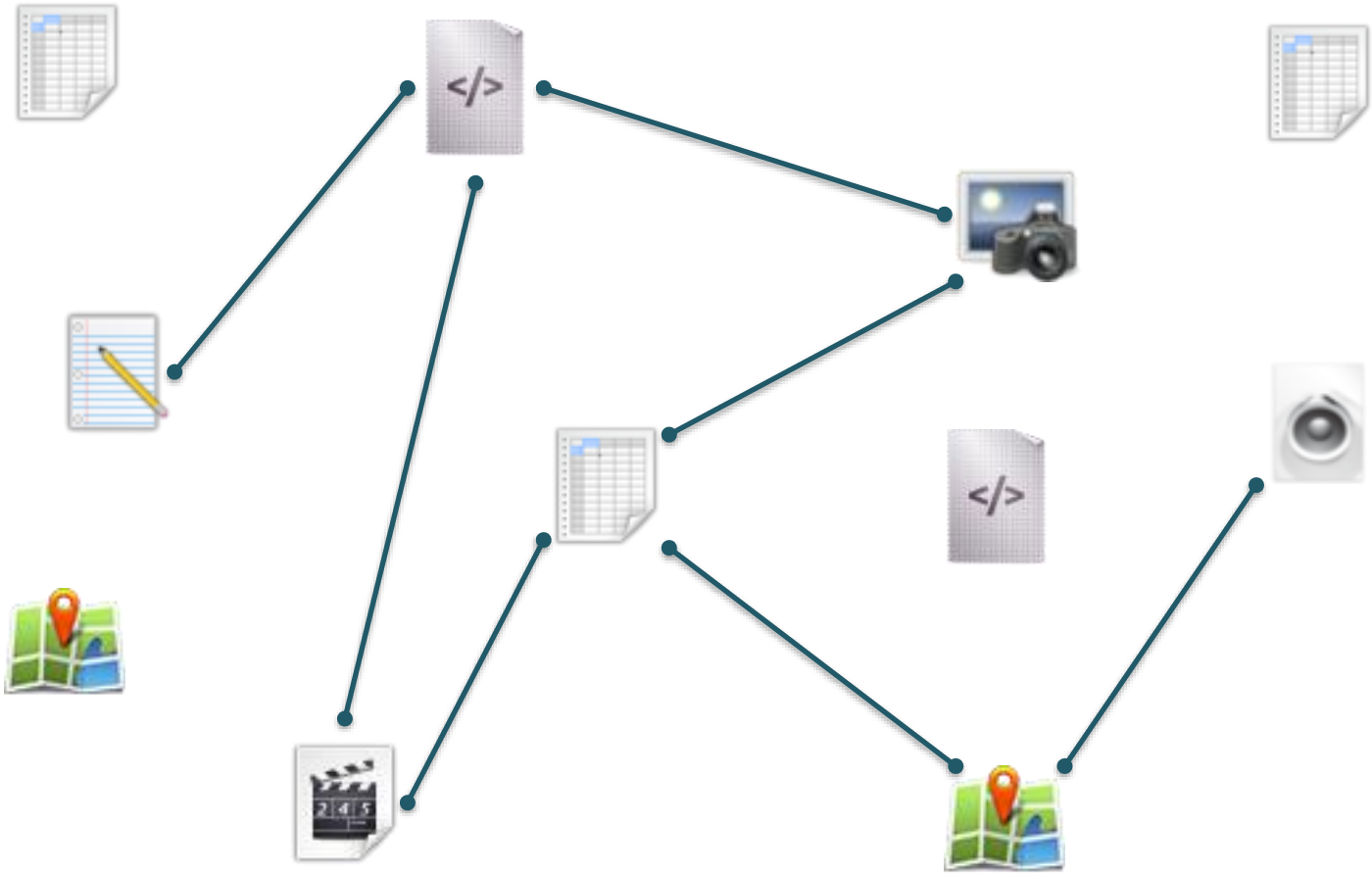
Linked Data



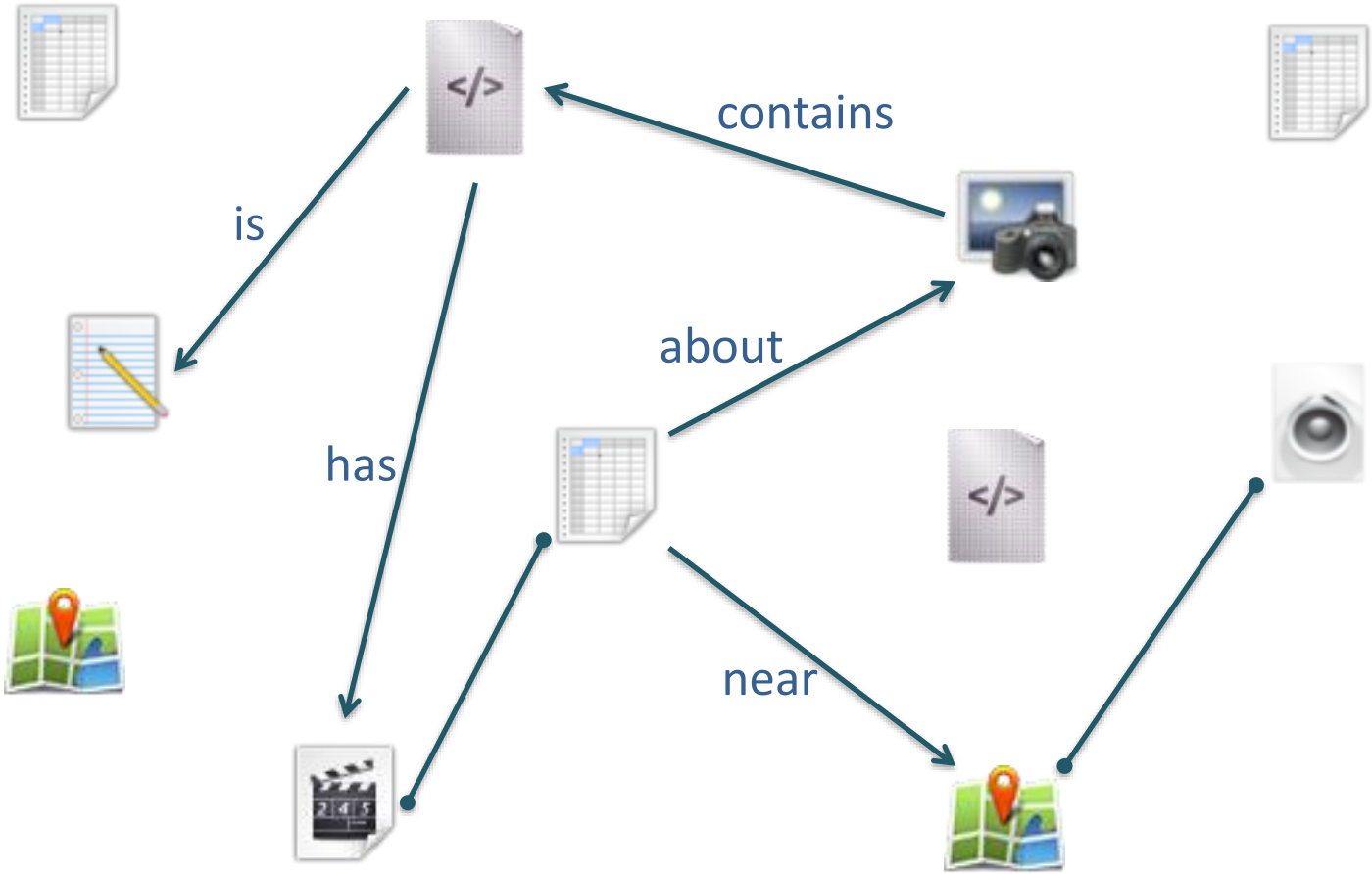
Linked Data



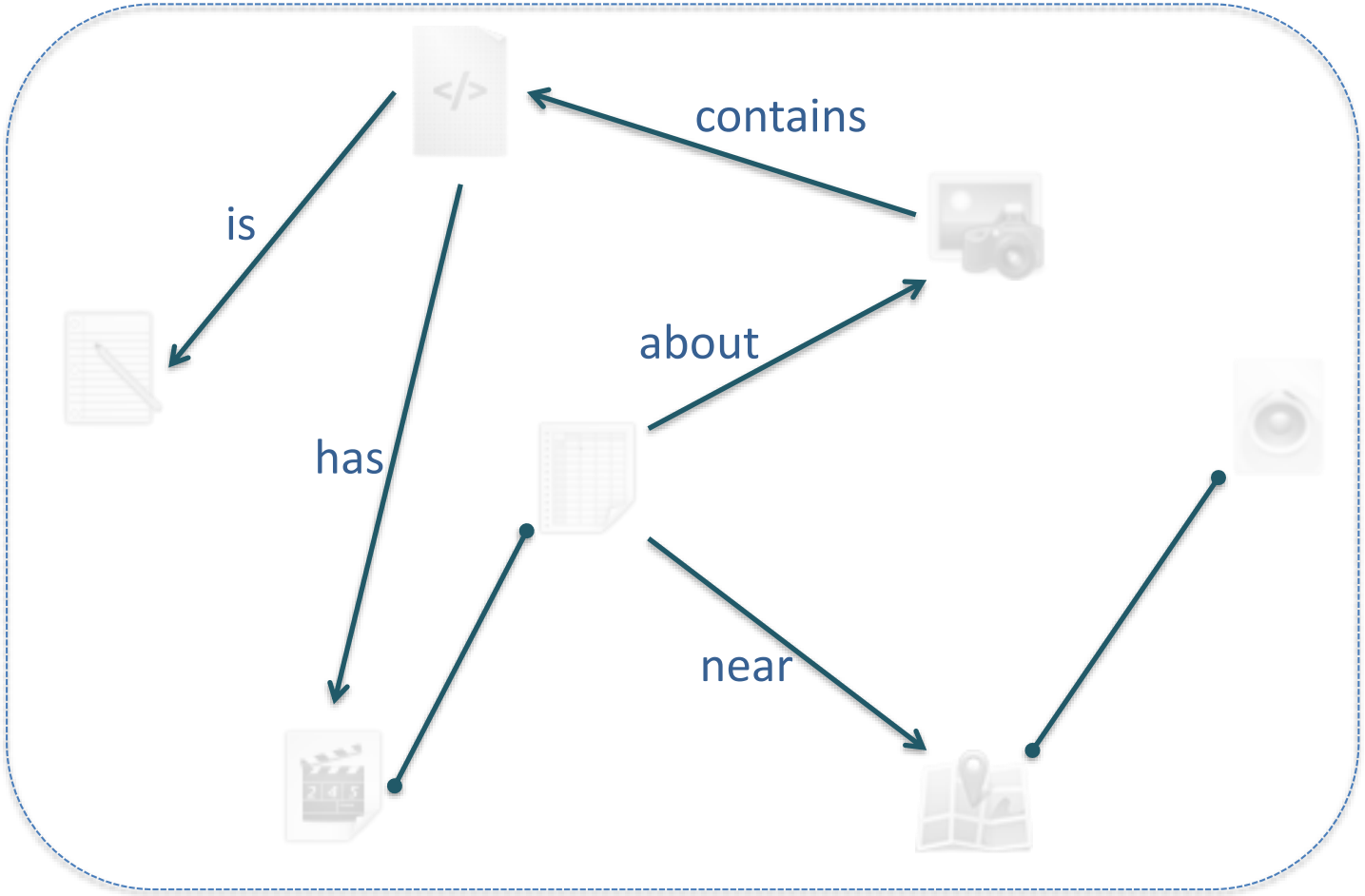
Linked Data



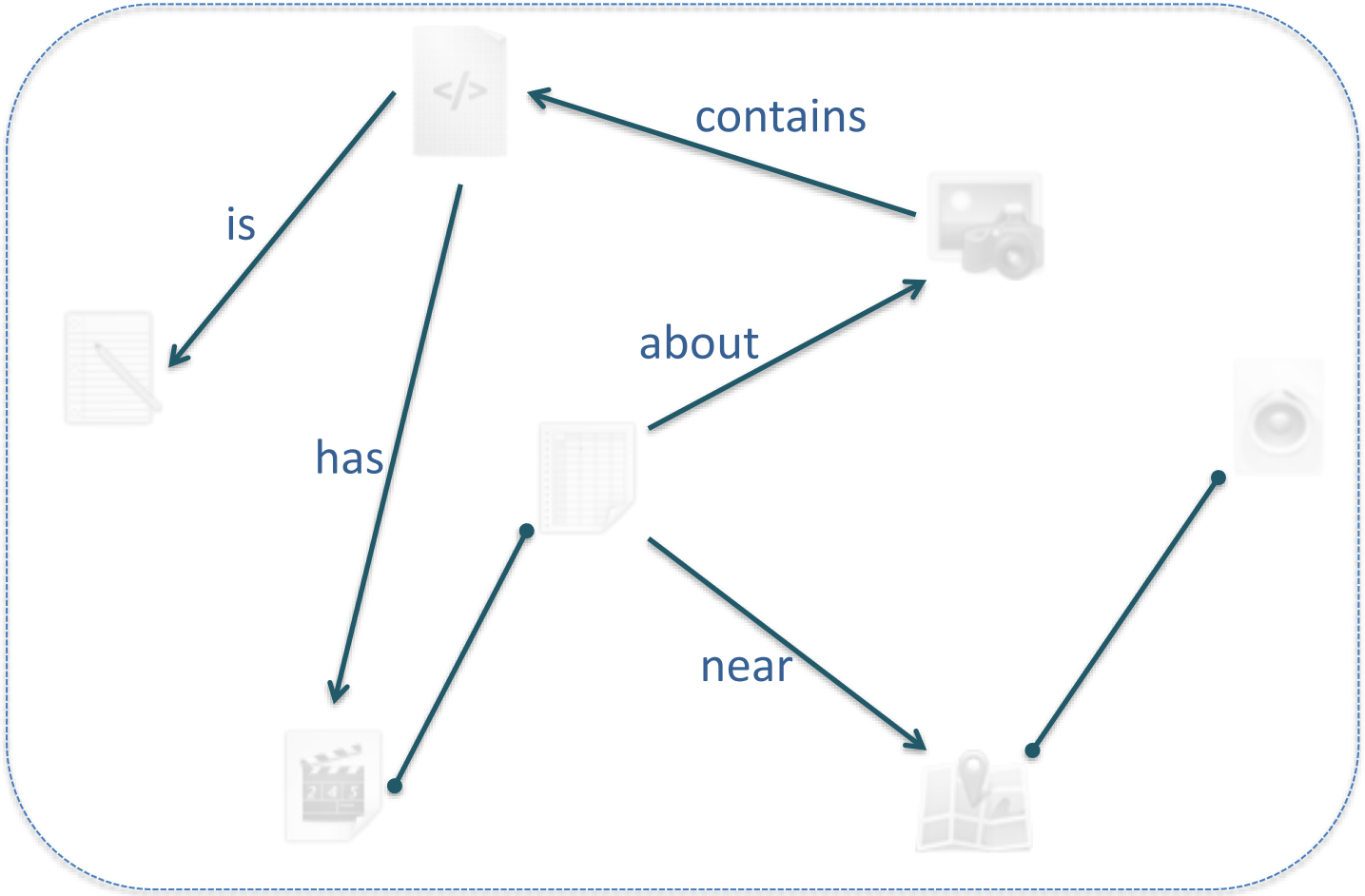
Linked Data



Linked Data

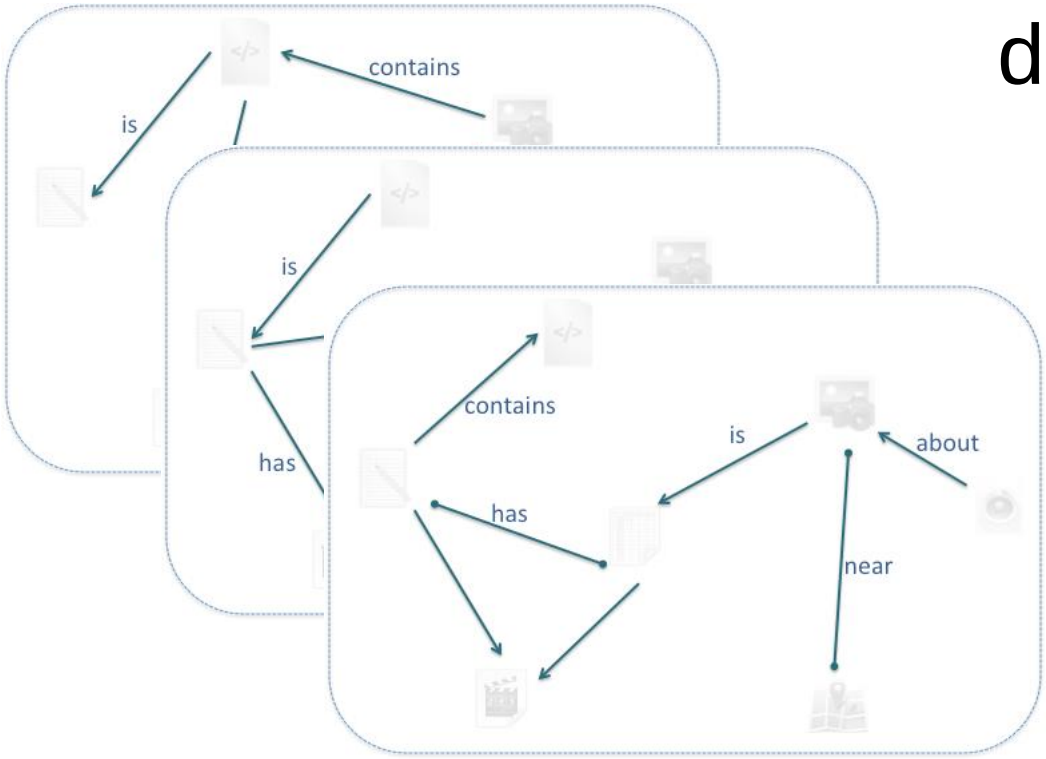


Linked Data



Linked Data

different domains,
different ontologies,
different link sets



Each such data mosaic act as an exchangeable “mind map”, capturing contextual metadata in a domain-specific perspective

Outcome

- More than just annotations: turns monolithic datasets into linked geo data
- Sum of all annotations constitutes a queriable graph on its own, giving context and semantics to original data
- In an open data context, sum of all annotations can be seen as crowd-sourced semantic metadata

Demo

http://demo.highlatitud.es/api/mosaics/inspire18

Thank you

This demo material at

http://demo.highlatitud.es/api/mosaics/inspire18.json
.jsonld
.ttl

phd [at] highlatitud.es
@pduchesne