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# MAKING INSPIRE DATA DISCOVERABLE AND FINDABLE THROUGH POPULAR SEARCH ENGINES

## EXPERIMENTATION ON FRENCH GEOCATALOGUE

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brgm

# IT CONTEXT

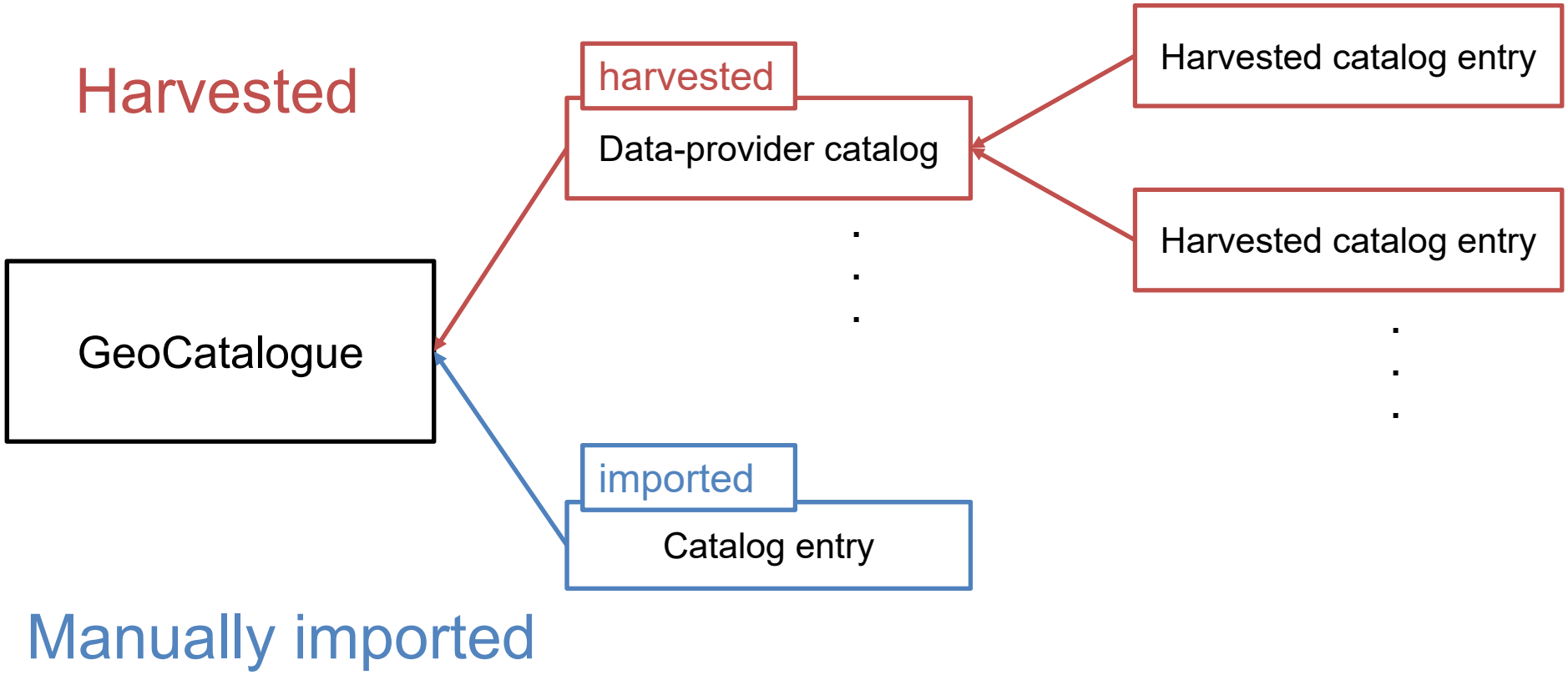
- BRGM, French geological survey, is implementing the national INSPIRE catalogue, named Geocatalogue

- It's hard to find datasets
  - Difficulties to find data through Inspire specialized search engines like Geoportals or Geocatalogues
  - General public even unaware of the existence of such tools

- How to help search engine index those datasets ?
  - Vocabulary : Schema.org
    - Proposed by important search engines Google, Microsoft, Yahoo and Yandex
  - Payload
    - JSON-LD
    - Or embedded in HTML pages

## FRENCH CONTEXT

- Metadata flow into Geocatalogue



# FRENCH CONTEXT

- Testing it on the French GeoCatalogue
  - Identify schema.org tags to be used
    - Building on feedback from previous experience:

      https://www.w3.org/2015/spatial/wiki/ISO_19115_-_DCAT_-_Schema.org_mapping

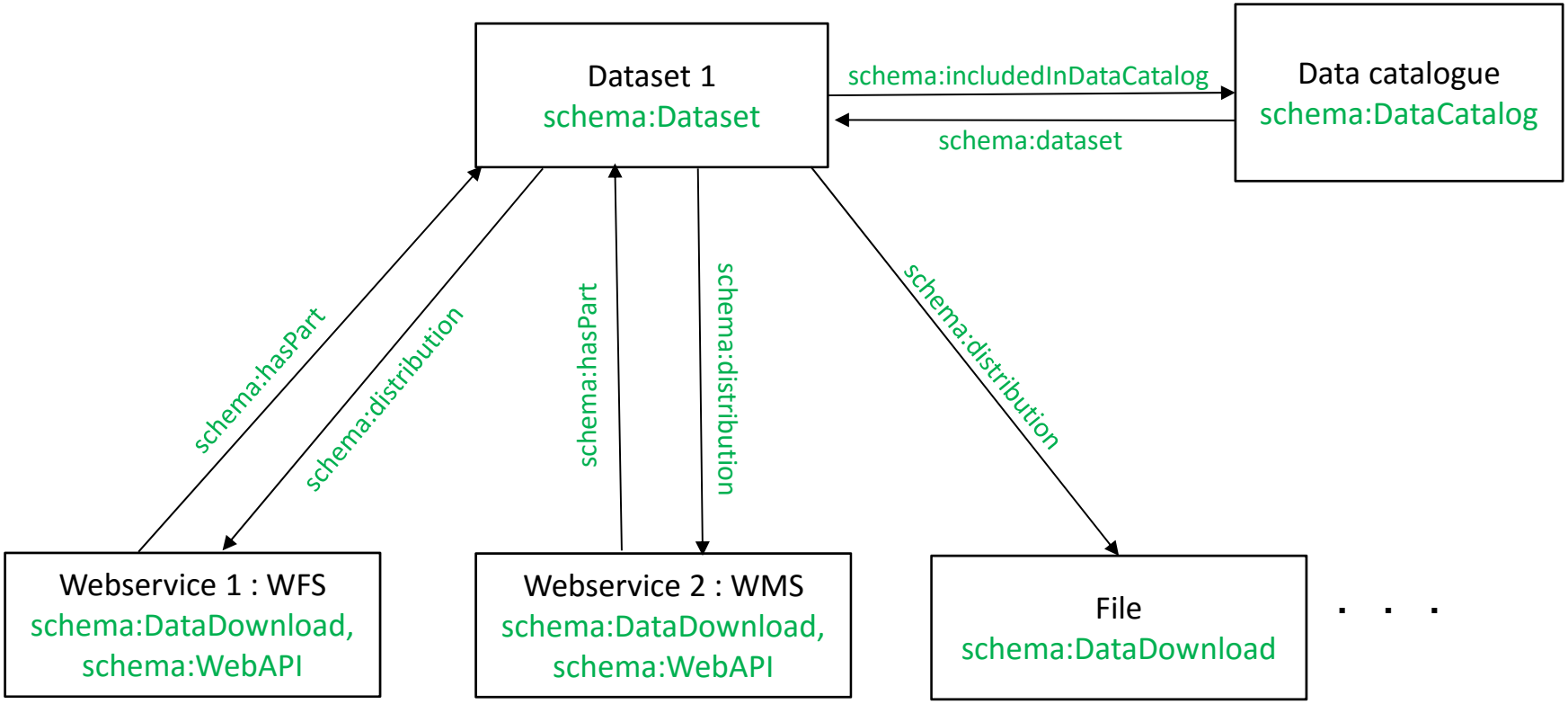
      https://ec-jrc.github.io/dcat-ap-to-schema-org/

      http://geocat.fr/dataset-prop.html

  - Define a national URI architecture
    - The exercise brings back the importance of a clean URI approach (data provider and national level)
    - Taking into account the 3 types of data providers
      - Harvested by the national catalogue
        - with a URI policy (= defined and that resolves)
        - with no URI policy
      - Not having a SDI and which metadata records are manually imported into the national catalogue (thus no data provider URI policy)

# PROPOSED DATA STRUCTURE

- Generic JSON-LD approach
- Use schema:dataset & schema:includedInDatacatalog to link catalogues and datasets
- Use schema:distribution to declare services



# PROPOSED DATA STRUCTURE

- JSON-LD examples (dataset, catalogue & service)

Catalogue

```
{
   "@context": "http://schema.org/",
   "@type": "DataCatalog",
   "@id": "https://data.geoscience.fr/id/catalogue/BRGM",
   "name": {value":"BRGM Data Catalog", "@language": "en"},
   "description": "BRGM metadata catalog",
                 …..
   "dataset":["https://data.geoscience.fr/id/dataset/borehole", … ]
                 …..
   "about": ["https://www.eionet.europa.eu/gemet/en/inspire-
theme/ge", … ],
…..
}
```

Dataset

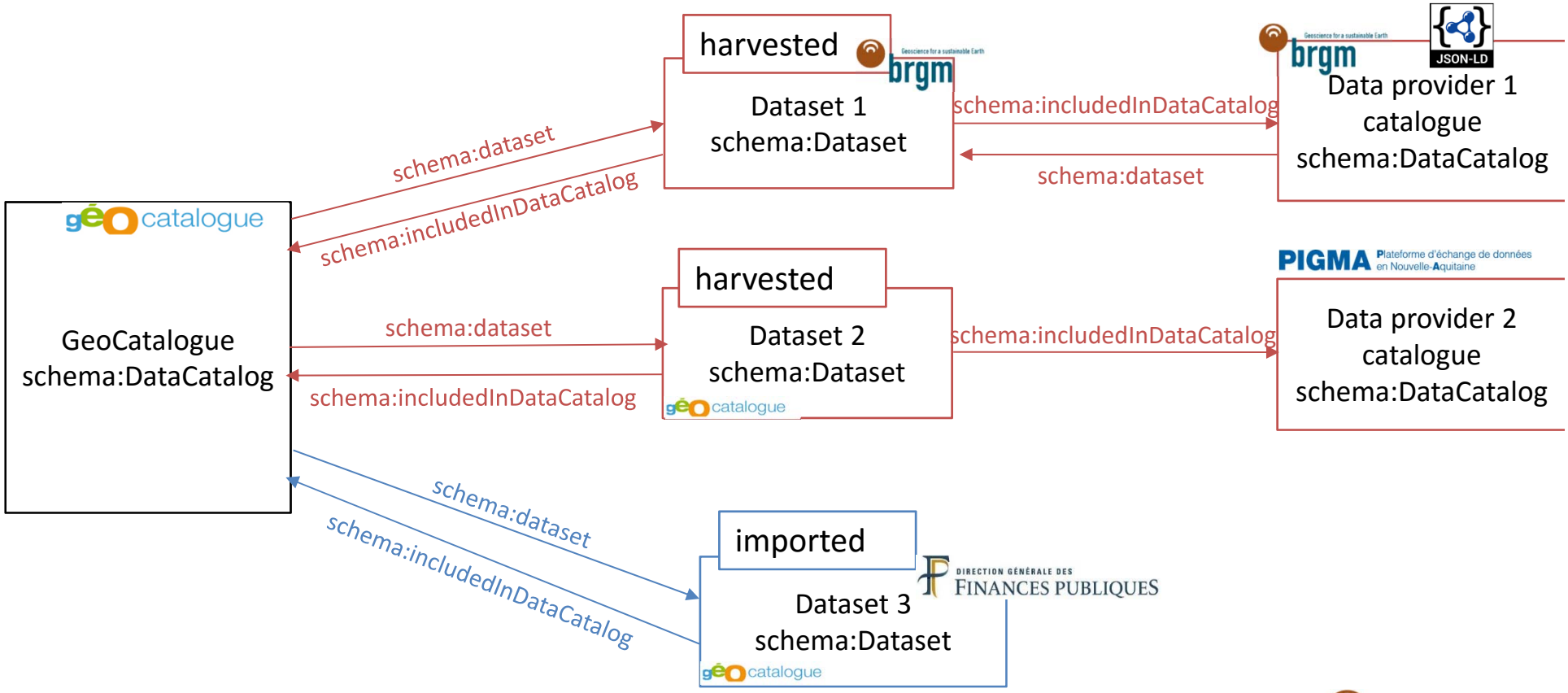
```
{
   "@context": "http://schema.org/",
   "@type": "Dataset",
   "@id": "https://data.geoscience.fr/id/dataset/borehole",
   "includedInDataCatalog": "https://data.geoscience.fr/id/
       catalogue/BRGM",
   "name": {value":"Borehole",  "@language":"en"},
                 …
   "distribution": [
      { "@id":"https://data.geoscience.fr/api/wfs/borehole",
       "@type":["DataDownload","WebAPI"],
       "contentUrl":"http://geoservices.brgm.fr"} … ],
…..
}
```

Service

```
{
   "@context": "http://schema.org/",
   "@id":"https://data.geoscience.fr/api/wfs/borehole",
   "@type":["DataDownload","WebAPI"],
   "name": "Borehole WFS Service",
                 …..
    keywords":[
    {"@value":"Forage", "@language":"fr"},…],
                 ……
"spatialCoverage":{"@type":"Place",
"geo": {"@type":"GeoShape",
"box":[     "-5.79028,41.36493 9.56222,51.09111",
            "-61.7961,15.87 -61.1871,16.5129",
            "-61.2315,14.4028 -60.817,14.8801",
            "-54.6038,2.11347 -51.6481,5.75542",*
            "55.2206,-21.3739 55.8531,-20.8565",
            "45.0392,-12.9925 45.2297,-12.6625"]
            }
 }, ……
```

# PROPOSED DATA STRUCTURE

- Not all data provider have a URI policy that resolves to a well defined JSON-LD representation
- Example below



# URIS IN THE PICTURE

- Use persistent URI to identify catalogues, datasets and services

- Rationale
  - For data provider having a URI policy that resolves in JSON-LD : respect it

  - For the others

  Define a national pattern

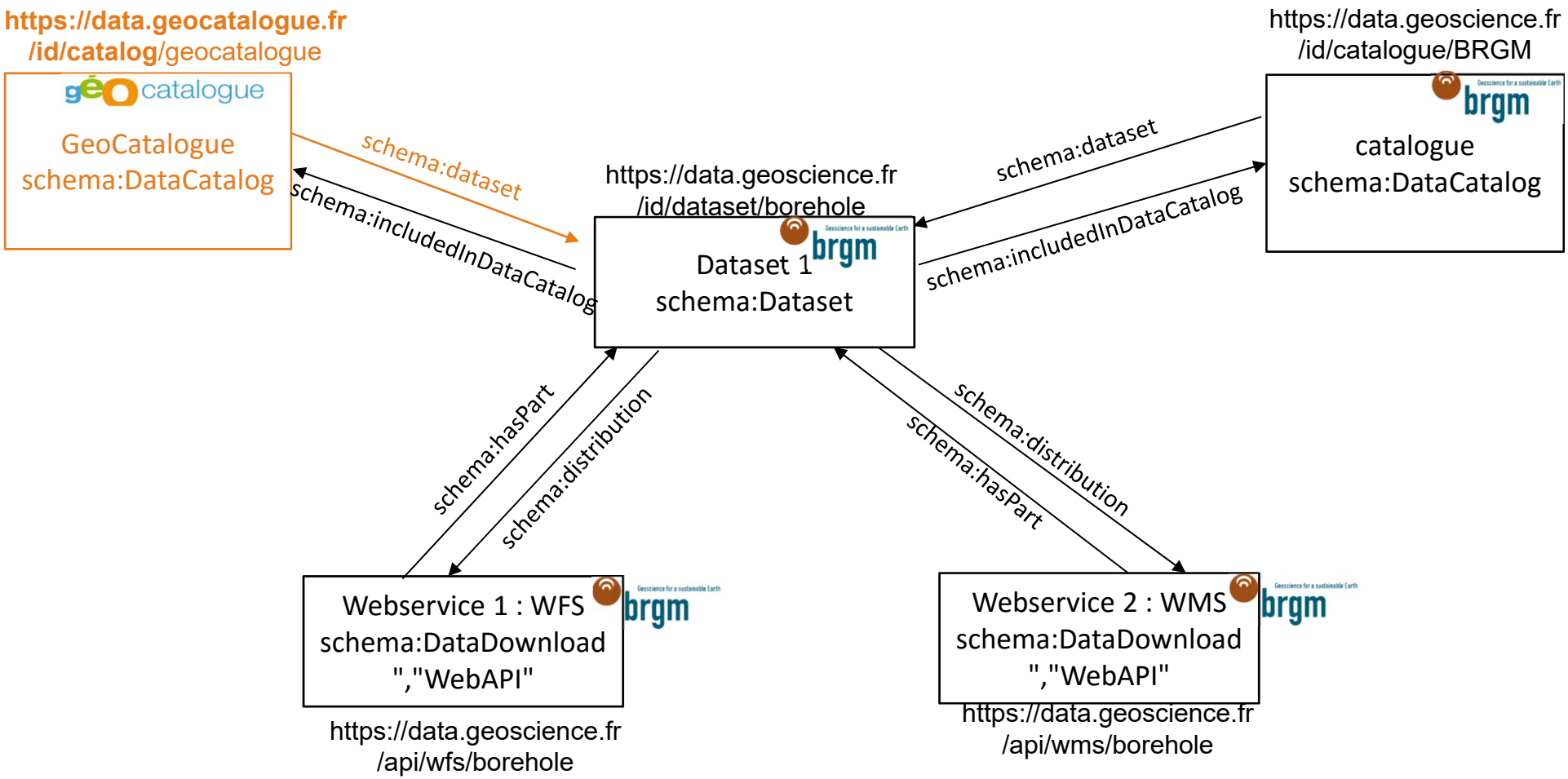
  Data catalogue : https://data.geocatalogue.fr/id/catalog/{data_provider_catalogue_id}

  Dataset : https://data.geocatalogue.fr/id/dataset/{data_provider_id}_{geocatalogue_defined_uuid}

  →When those start having a URI policy that resolves in JSON-LD have a HTTP 301 ('Moved Permanently') from the previous URI to the new one

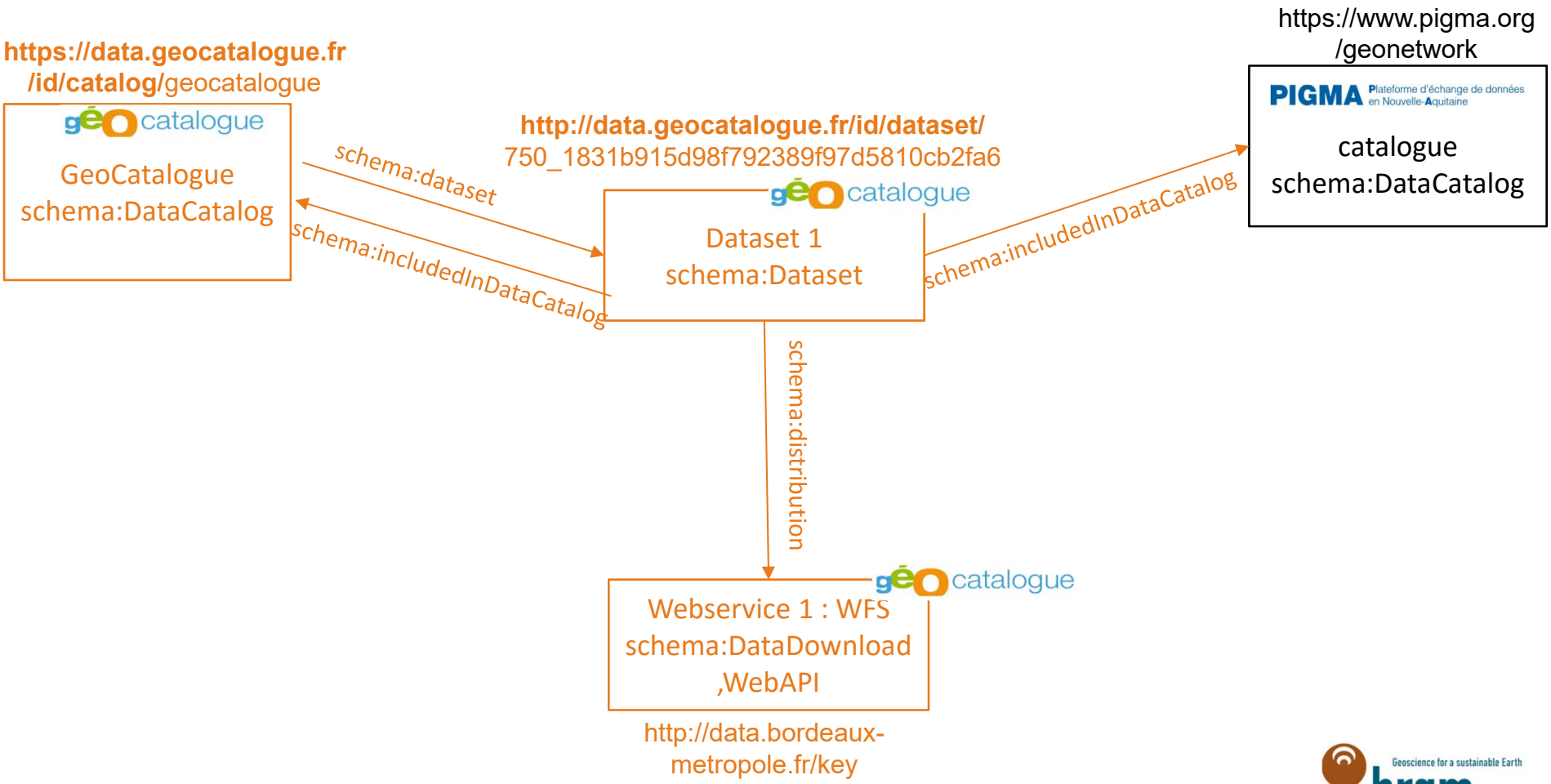
# URIS – APPLIED TO THE DATA STRUCTURE

- Data provider with a URI policy that resolves to JSON-LD
- Comprehensive example on BRGM national borehole dataset



# URIS – APPLIED TO THE DATA STRUCTURE

- Data provider with non URI or a URI policy that does not resolve to JSON-LD
- Comprehensive example on PIGMA platform



# WHAT'S NEXT

- Pending IT aspects
  - How to declare a webservices that is not linked to a specific dataset (ex : WPS) ?
  - Link from catalogue to catalogue ?
  - Follow DCAT2 / schema.org work
  - Possibility to use vocabulary from dcat (ex: dcat:DataService, …) : how is it indexed by search engines

- Implementation
  - Agree on JSON-LD patterns
  - Test indexing by search engines
  - Implement the architecture at national scale
  - Maybe push the solution to open source projects (ex : Geonetwork)

# BENEFITS

- National GeoCatalogue and linked catalogues : increases usability and visibility

- Public : enhances overall search experience, allowing to discover, browse, view and download much more environmental data than before

# THANK YOU

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