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MAKING INSPIRE DATA DISCOVERABLE AND FINDABLE THROUGH POPULAR SEARCH ENGINES

EXPERIMENTATION ON FRENCH
GEOCATALOGUE

A. FELIACHI, S. GRELLET AND T. VILMUS



Geoscience for a sustainable Earth

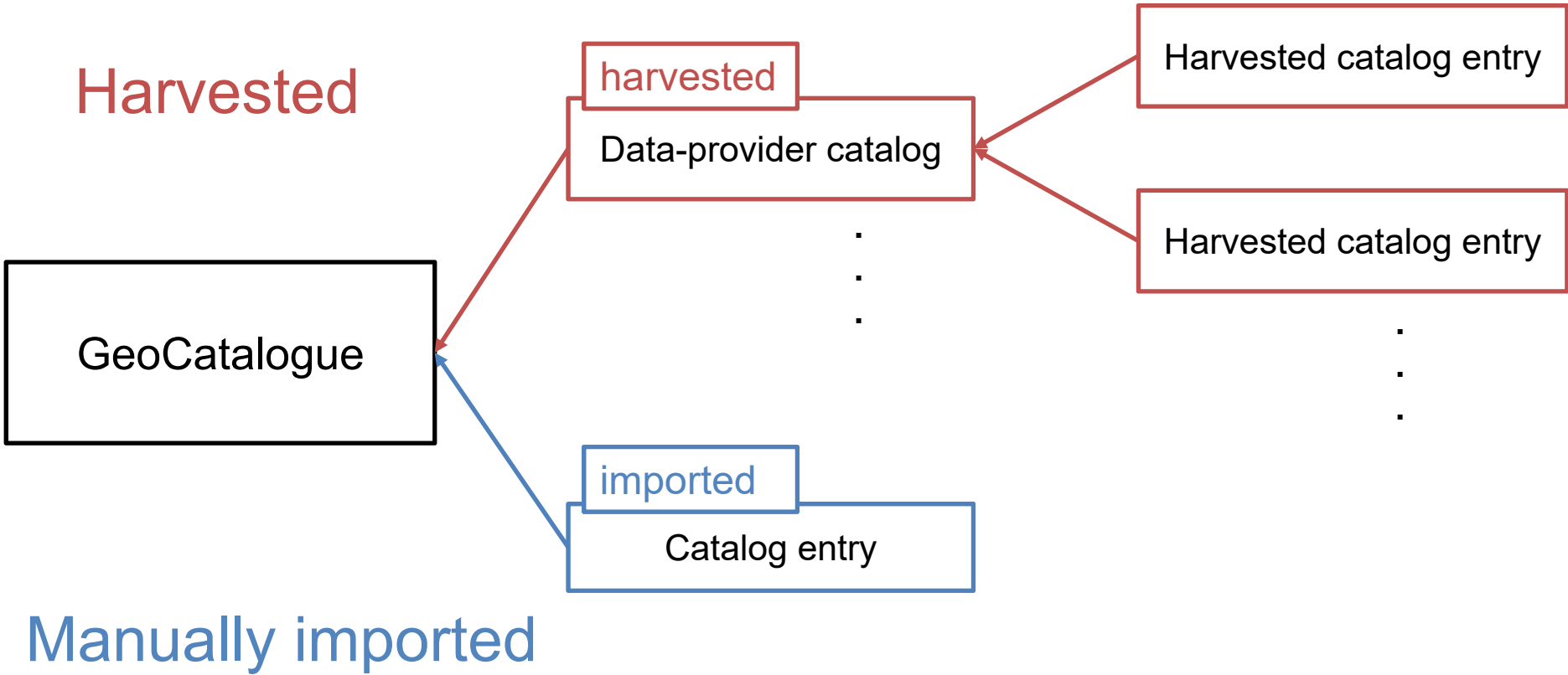
brgm

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

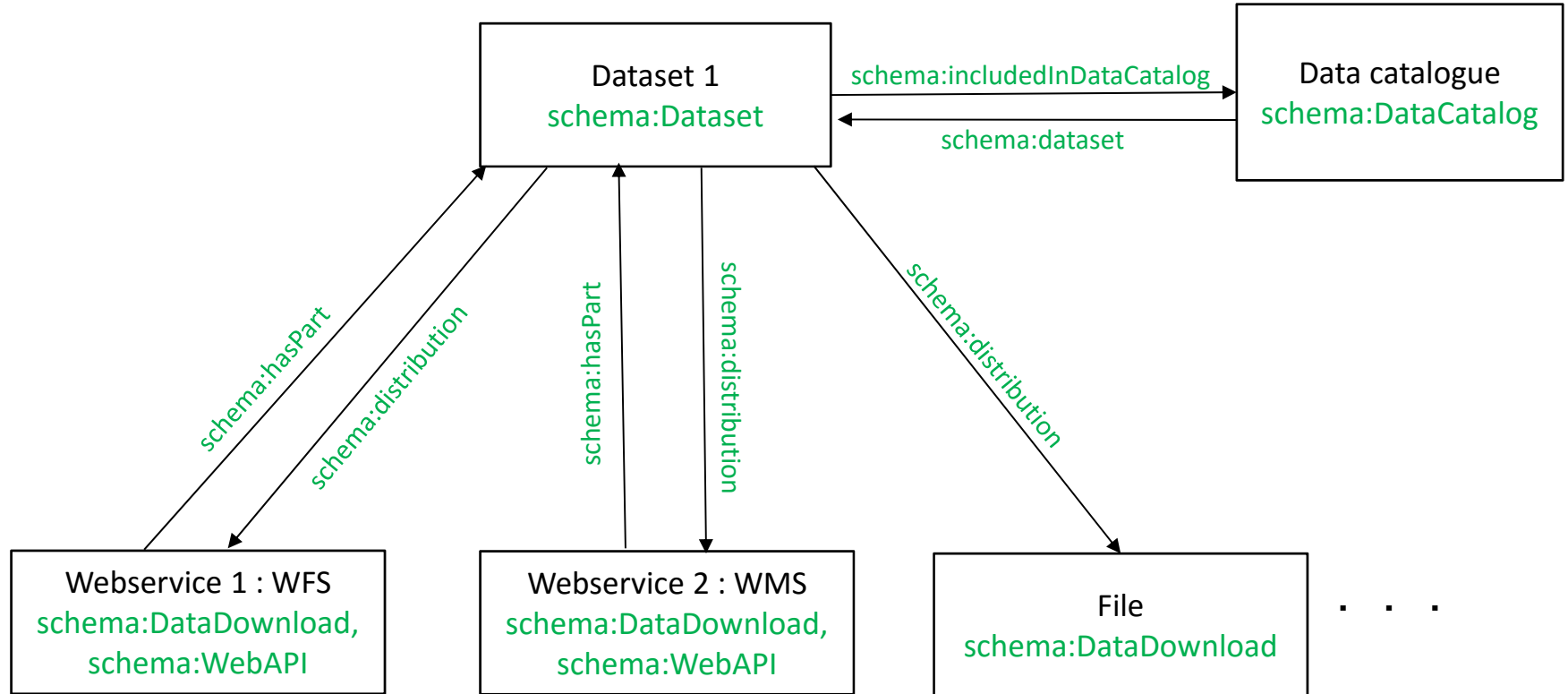


FRENCH CONTEXT

- 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://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

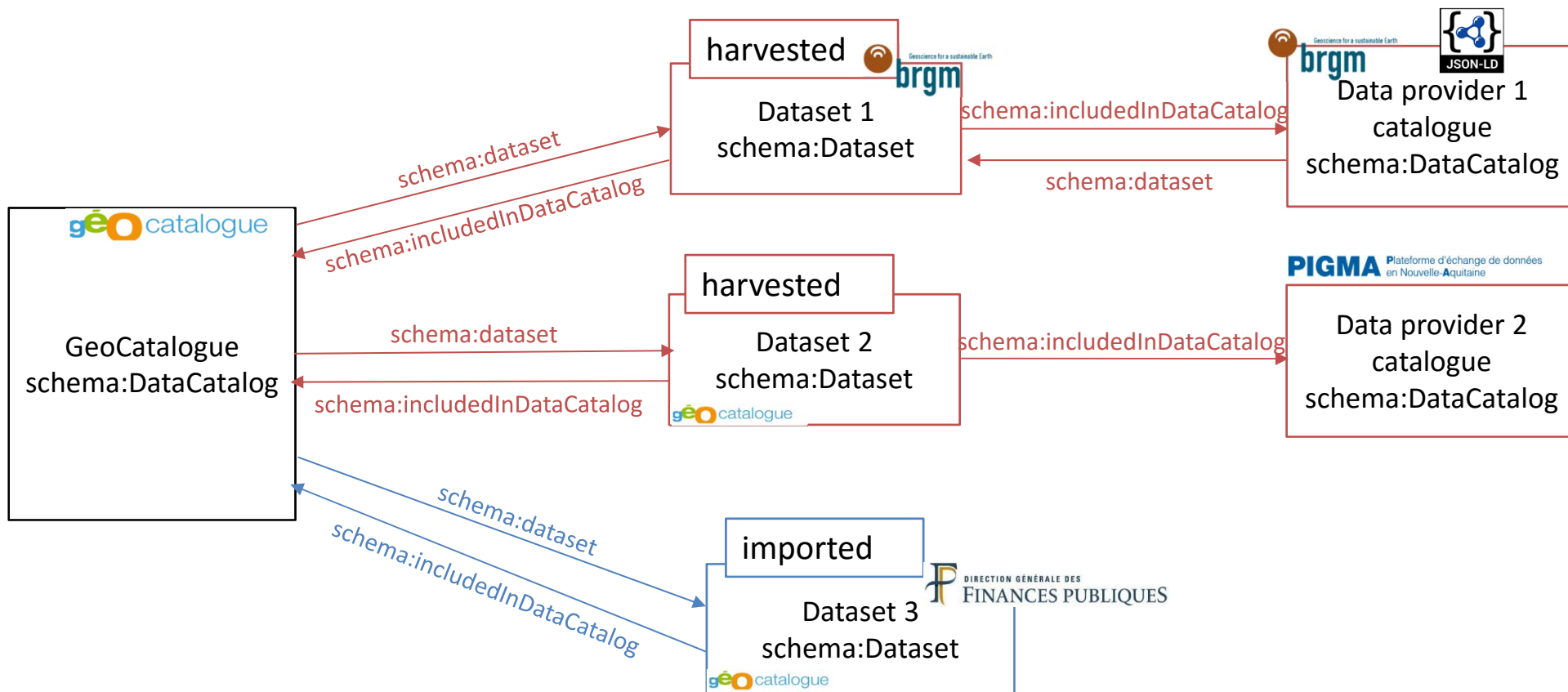
```
{
  "@context": "http://schema.org/",
  "@type": "Dataset",
  "@id": "https://data.geoscience.fr/id/dataset/borehole",
  "includedInDataCatalog": "https://data.geoscience.fr/id/catalogue/BRGM",
  "name": {value:"Borehole", "@language":"en"},
  ...
  "distribution": [
    { "@id": "https://data.geoscience.fr/api/wfs/borehole",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

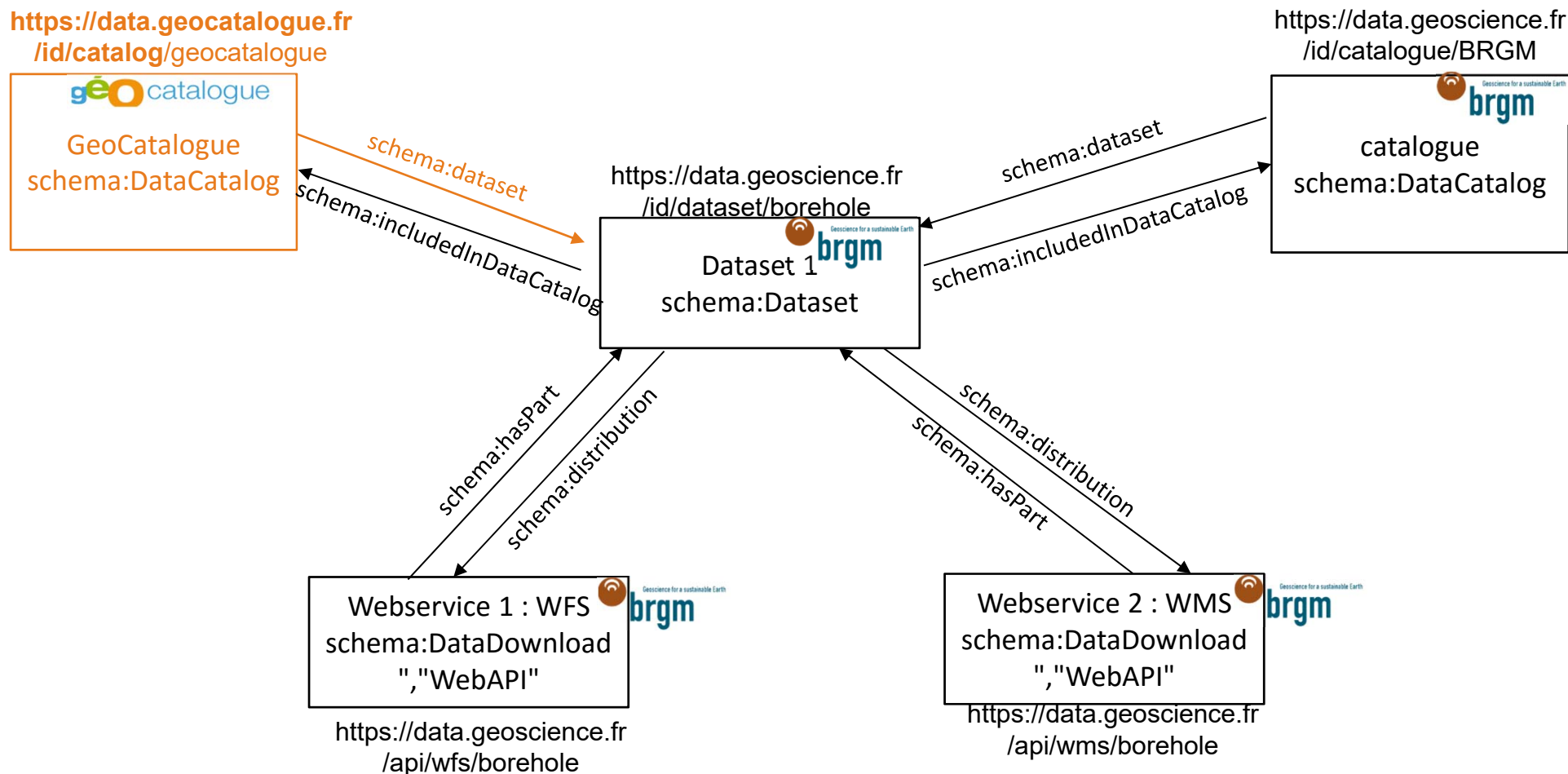
Data catalogue : https://data.geocatalogue.fr/id/catalog/{data_provider_catalogue_id}

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

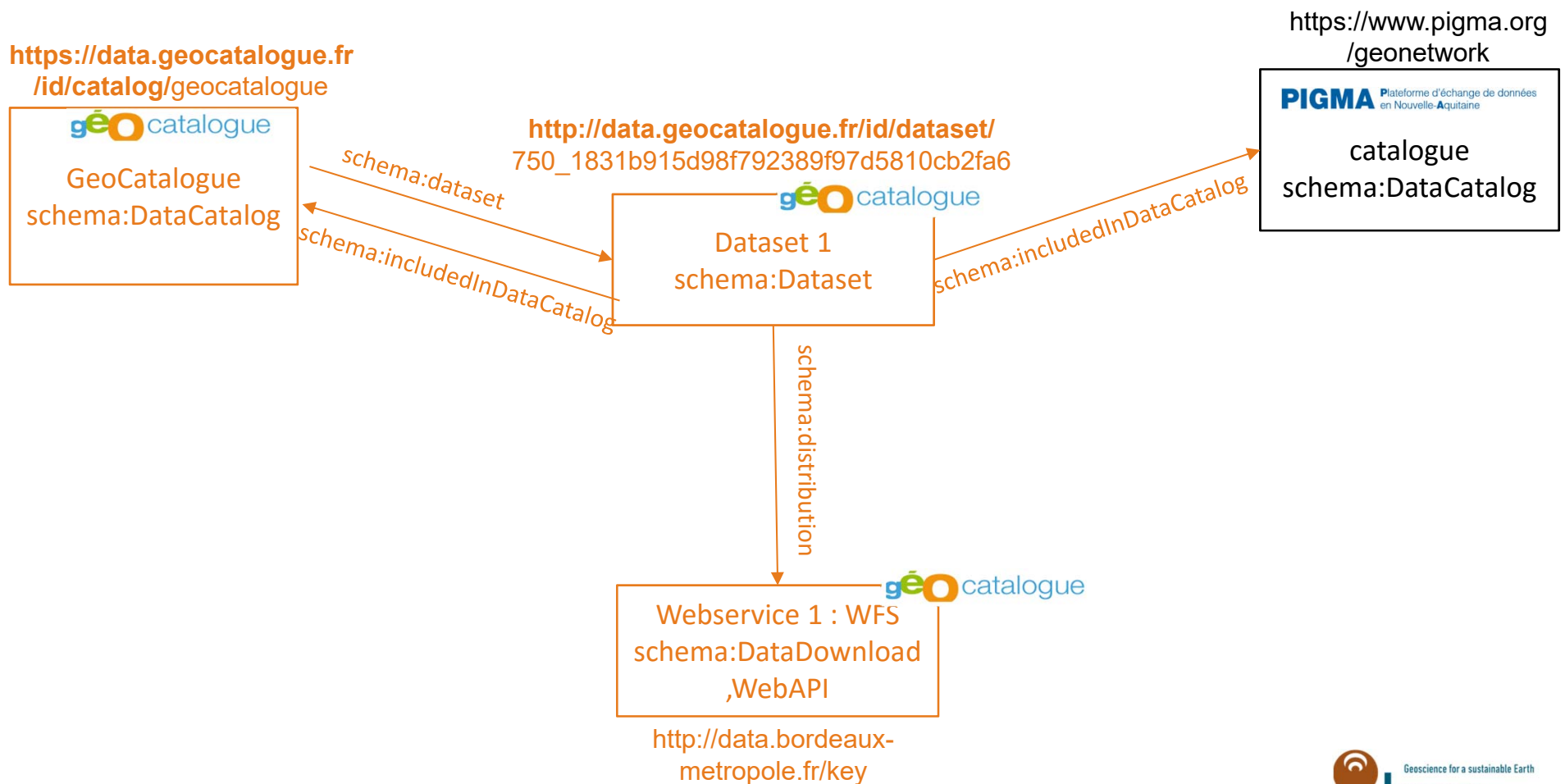
URIS – APPLIED TO THE DATA STRUCTURE

- 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 webservice 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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