IGN

l'information grandeur nature

INSTITUT NATIONAL
DE L'INFORMATION
GÉOGRAPHIQUE
ET FORESTIÈRE

IGN-F Feedbacks for Setting Up a INSPIRE Compliant Download Service with Deegree

Romain Wieser – IGN-F

INSTITUT NATIONAL
DE L'INFORMATION
GÉOGRAPHIQUE
ET FORESTIÈRE

PLAN

- Introduction
- INSPIRE download service specification
- Setting up a INSPIRE Download Service
- Data preparation and integration

Introduction

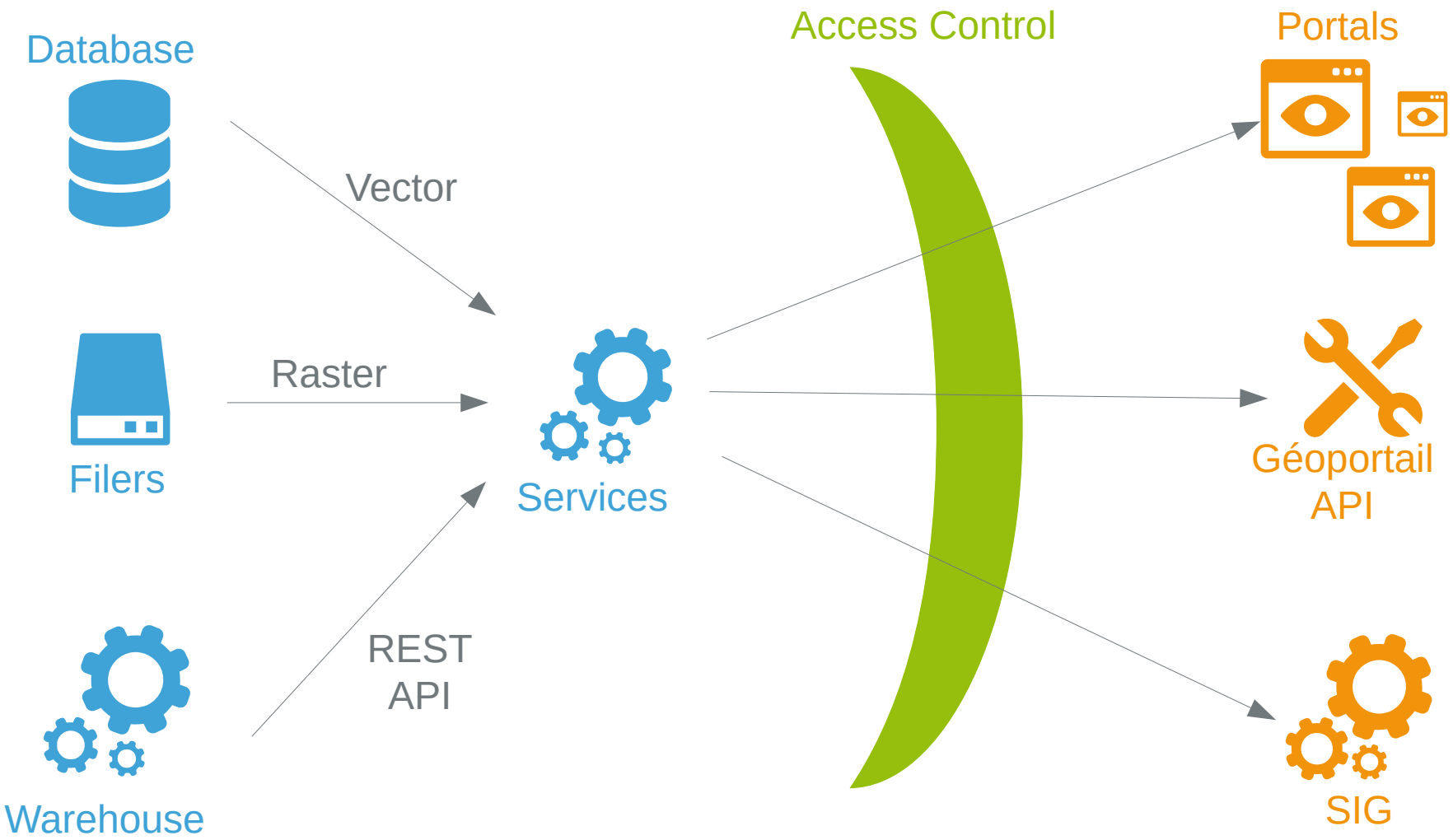
National Institute of Geographic and Forest Information

- IGN-France
- Our missions :
  - Describe the national territory and the occupation of the French land
  - Elaborate and maintain the national forest resources inventory
- Based in Saint-Mandé (near Paris)
- Involved in many European project like INSPIRE

Géoportail

- Provide a web access for everyone to the national data produced by IGN and its partners.
- Build on top of OGC standards (WMTS, WMS, WFS, WPS, …)
- Portals:
  - Web : www.geoportail.gouv.fr
  - Tablet : tab.geoportail.fr
  - Mobile : m.geoportail.fr
- Apps :

Géoportail – Architecture



INSPIRE

- Services and data sets shall be conformant and available for the end of 2017 (themes of Annexe I)
  - Make our services INSPIRE compliant
  - Transform our data sets in INSPIRE schema
- Annexe II and III shall be ready for 2020
  - Services must be ready to handle new data
  - Transform new themes using experience acquired during Annexe I

ELF

- European Location Framework
  - Platform of INSPIRE compliant geo-information, harmonised at a cross-border and pan-European level
  - Cascaded services
  - ELF schema based on INSPIRE schema
  - Collaborative consortium

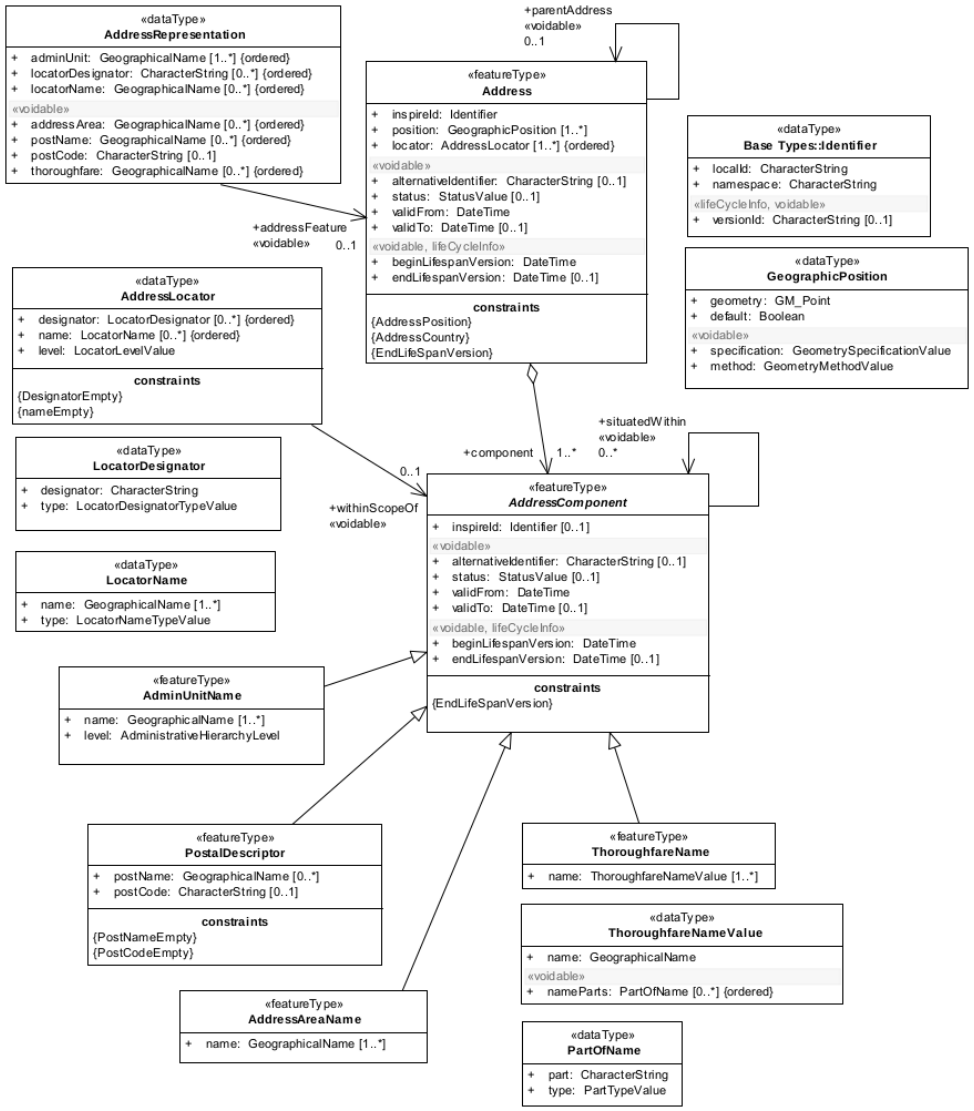
INSPIRE Download Service Specification

Based on OGC WFS 2.0.0

- INSPIRE compliant service must implement the OGC WFS 2.0.0
- INSPIRE also require extended capabilities
  - In order to support multi-language
  - To handle INSPIRE complex schema

Data specification

- Example with AD theme



Data specification

```
<ad:Address gml:id="AD_ADDRESS_FR_IGNF_BDUniGE_Adresses_MET_ADRNIVX_0000000284833197">
    <ad:inspireId>
        <base:Identifier>
            <base:localId>ADRNIVX_0000000284833197</base:localId>
            <base:namespace>FR_IGNF_BDUniGE_Adresses_MET</base:namespace>
        </base:Identifier>
    </ad:inspireId>
    <ad:position>
        <ad:GeographicPosition>
            <ad:geometry owns="false">
                <gml:MultiPoint gml:id="AD_ADDRESS_FR_IGNF_BDUniGE_Adresses_MET_ADRNIVX_0000000284833197_AD_POSITION_0" srsName="EPSG:4326">
                    <gml:pointMember>
                        <gml:Point gml:id="GEOMETRY_49e9dacb-3043-4519-a406-0664bb64332f" srsName="EPSG:4326">
                            <gml:pos>3.036006 42.845445</gml:pos>
                        </gml:Point>
                    </gml:pointMember>
                </gml:MultiPoint>
            </ad:geometry>
            <ad:specification>parcel</ad:specification>
            <ad:method>fromFeature</ad:method>
            <ad:default>true</ad:default>
        </ad:GeographicPosition>
    </ad:position>
    <ad:status>current</ad:status>
    <ad:locator>
        <ad:AddressLocator>
            <ad:designator>
                <ad:LocatorDesignator>
                    <ad:designator>83</ad:designator>
                    <ad:type>addressNumber</ad:type>
                </ad:LocatorDesignator>
            </ad:designator>
            <ad:level>siteLevel</ad:level>
            <ad:withinScopeOf xlink:href="#AD_THOROUGHFARENAME_FR_IGNF_BDUniGE_Adresses_MET_codevoie_RES_LES_PINEDES_DU_GOLF_11202A097" />
        </ad:AddressLocator>
    </ad:locator>
    <ad:validFrom xsi:nil="true" nilReason="unpopulated" />
    <ad:beginLifespanVersion xsi:nil="true" nilReason="unpopulated" />
    <ad:parcel xsi:nil="true" />
    <ad:parentAddress />
    <ad:building xsi:nil="true" />
    <ad:component xlink:href="#AD_ADMINUNITNAME_FR_IGNF_BDUniGE_Adresses_MET_codeINSEE_FR" />
    <ad:component xlink:href="#AD_ADMINUNITNAME_FR_IGNF_BDUniGE_Adresses_MET_codeINSEE_11202" />
    <ad:component xlink:href="#AD_POSTALDESCRIPTOR_FR_IGNF_BDUniGE_Adresses_MET_codepostal_11370" />
    <ad:component xlink:href="#AD_THOROUGHFARENAME_FR_IGNF_BDUniGE_Adresses_MET_codevoie_RES_LES_PINEDES_DU_GOLF_11202A097" />
</ad:Address>
```

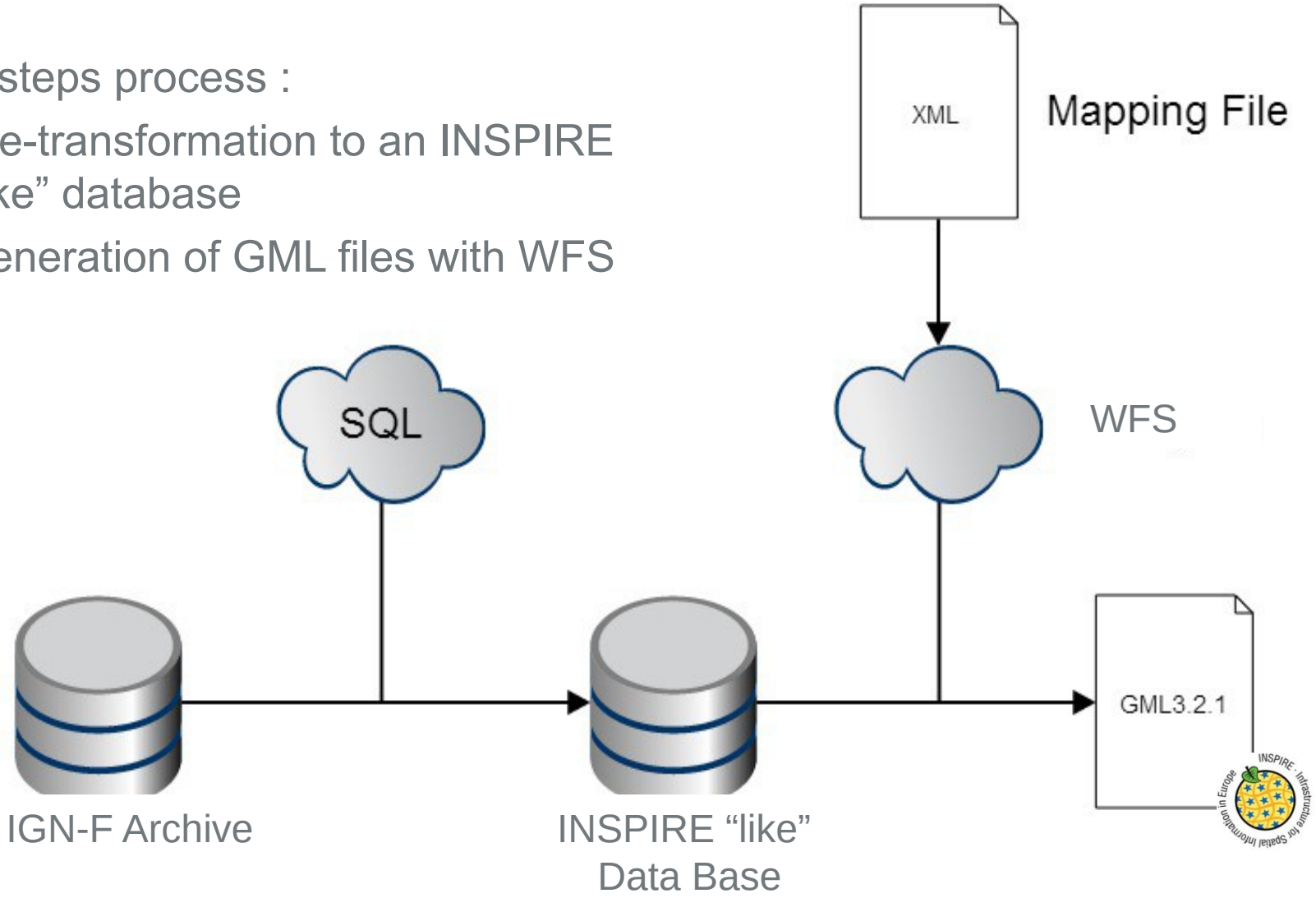
The challenge

- INSPIRE require to serve complex feature type
- Our database can not handle complex feature type, only relation tables
- Possible solutions :
  - Transform national data in INSPIRE schema on-the-fly
    - Heavy, can be slow
  - Store transformed data in a complex feature store
    - Need to refractor our architecture
  - Store transformed data in simple feature store and generates the GML on the fly

Setting Up a INSPIRE Download Service

Global Architecture

- A two steps process :
  - Pre-transformation to an INSPIRE "like" database
  - Generation of GML files with WFS



Initial solutions

- The download service for the Géoportail is powered by 

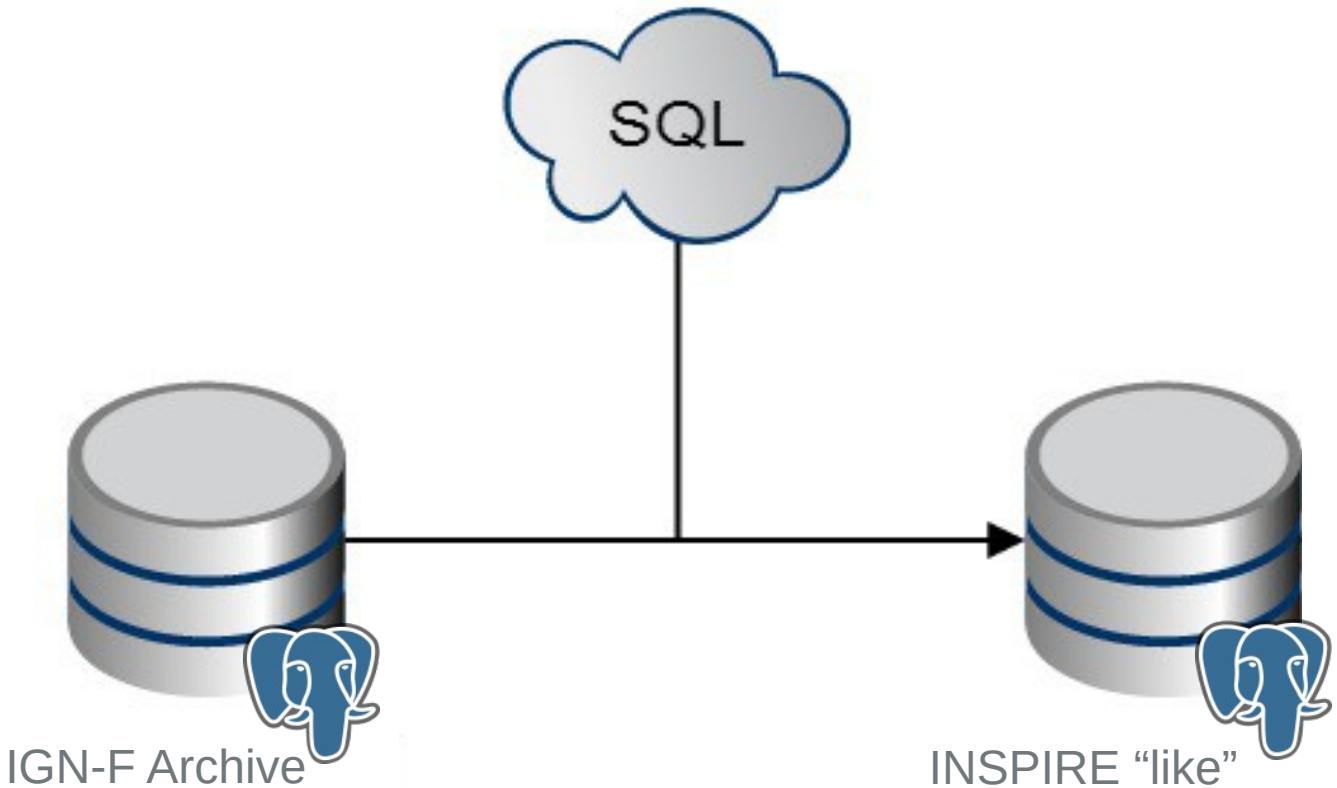
- For INSPIRE WFS we consider two solutions :
  - Geoserver with App-Schema pluging
  - deegree
- We choose Deegree for :
  - Natively handle INSPIRE
  - Better performance

Installation and Setting

- Deployment into a Tomcat servlet container
- Deegree generate the INPSIRE like database schema and the mapping file corresponding by using XSD files
  - Very useful but not always work
- And that's it !
  - The main part of the work is to transforming the data

Data preparation and integration

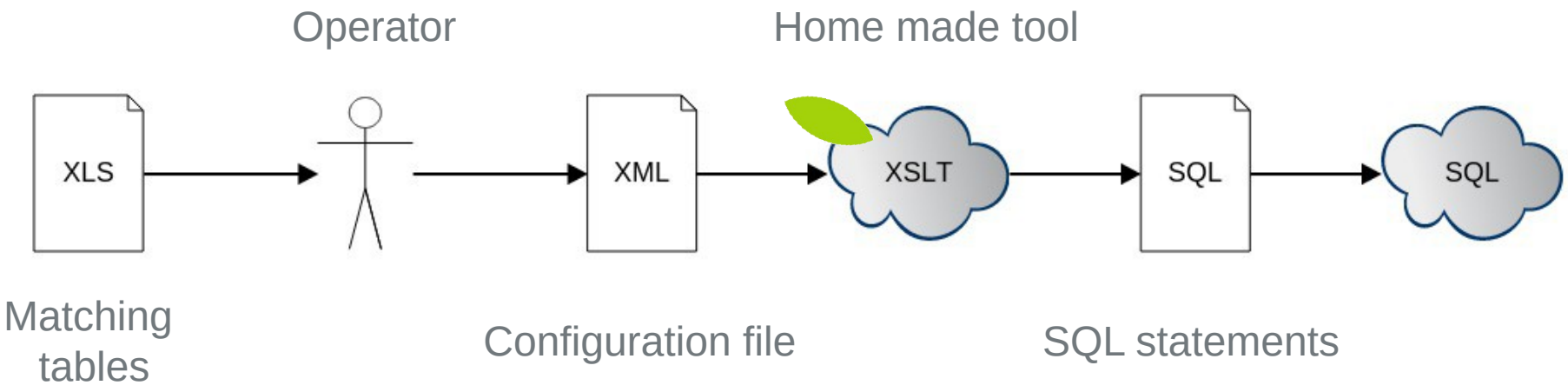
Populate the INSPIRE “like” database



Creating and maintaining transformation scripts

- Meetings with data owner and experts to define all transformation for each theme
  - 4-12h for each theme
  - Product a Excel spreadsheet useful for
    - SQL transformations
    - Validate final GML files
- With this human readable transformation file, creating transformation SQL scripts
  - Made a tool to help translate this Excel spreadsheet into SQL scripts

Creating and maintaining transformation scripts



Thank you for your attention