



# Data-service linking in Luxembourg

Jeff Konnen, Bernard Reisch (ACT)  
Stijn Goedertier (GIM)



LE GOUVERNEMENT  
DU GRAND-DUCHÉ DE LUXEMBOURG  
Administration du cadastre  
et de la topographie





- **Download services:**
  - ATOM/OpenSearch
  - implemented with GeoNetwork
  - generated based on dataset and service metadata (so always consistent)
- **View services:**
  - WMS GetCapabilities with minimal extension (scenario 1)
  - implemented with GeoServer
  - automated configuration of GeoServer based on dataset and service metadata guarantees data-service linking



- WFS 2.0.0 download service
  - download service serving complex GML features
  - Implemented with GeoRocket
  - **Opportunity:** each dataset must have a separate WFS endpoint (TG req 52) → new data-service linking helps avoid redundant service metadata record

**TG Requirement 52** A separate WFS endpoint shall be provided for each INSPIRE dataset thus providing one dataset per GetCapabilities response.

# Test sample: service endpoint



- <https://pocinspire.gim.be/wfs/AU.AdministrativeUnit?service=wfs&version=2.0.0&request=GetCapabilities>

```
<ows:ExtendedCapabilities>
  <inspire_dls:ExtendedCapabilities>
    <inspire_common:ResourceLocator>... </inspire_common:ResourceLocator>
    <inspire_common:MetadataUrl xsi:type="inspire_common:resourceLocatorType">
      <inspire_common:URL>... </inspire_common:URL>
    </inspire_common:MetadataUrl>
    ...
    <inspire_dls:SpatialDataSetIdentifier>
      <inspire_common:Code>D2E49C99-4F58-4154-A05E-
A3F392FC74CB</inspire_common:Code>
      <inspire_common:Namespace>LU.ACT.AU.ADMUNITITS</inspire_common:Namespace>
    </inspire_dls:SpatialDataSetIdentifier>
  </inspire_dls:ExtendedCapabilities>
</ows:ExtendedCapabilities>
```

Still needed? Link to  
dataset metadata?



- <https://pocinspire.gim.be/wfs/AU.AdministrativeUnit?service=wfs&version=2.0.0&request=GetCapabilities>

```
<FeatureType>
  <Name>au:AdministrativeUnit</Name>
  <Title>au:AdministrativeUnit</Title>
  <Abstract>This feature type is in dataset 'INSPIRE - Annex I Theme Administrative
Units - Administrative Unit'</Abstract>
  <wfs:DefaultCRS>http://www.opengis.net/def/crs/EPSSG/0/314662</wfs:DefaultCRS>
  <OutputFormats>
    <Format>text/xml; subtype=gml/3.2.1</Format>
  </OutputFormats>
  <ows:WGS84BoundingBox dimensions="2">...
</ows:WGS84BoundingBox>
  <MetadataURL xlink:href="id=75FC505D-6DC0-4BAF-807D-7239F64F6675"/>
</FeatureType>
```

Featuretype-level  
metadataURL sufficient?

# Test sample: dataset metadata



<https://pocinspire.gim.be/geonetwork/srv/eng/catalog.search#/metadata/75FC505D-6DC0-4BAF-807D-7239F64F6675>

gmx:Anchor accepted by  
GeoNetwork 3.8 but not  
supported by editor

## INSPIRE - Annex I Theme Administrative Units - Administrative Unit

This dataset contains the administrative units of the Grand-Duchy of Luxembourg. The dataset is structured according to the INSPIRE Annex I Theme - Administrative Units. The data has been derived from the Cadastral database and contains the shape of the country, the districts, the cantons and the municipalities.

### Download and links

|  |  |            |
|--|--|------------|
|  | <a href="http://www.opengis.net/def/crs/EPSSG/0/3035">http://www.opengis.net/def/crs/EPSSG/0/3035</a><br><a href="https://download.data.public.lu/resources/inspire-annex-i-theme-administrative-units-administrative-unit-3/20191010-223341/au_administrativeunit.gml">https://download.data.public.lu/resources/inspire-annex-i-theme-administrative-units-administrative-unit-3/20191010-223341/au_administrativeunit.gml</a> | Download   |
|  | <b>AU AdministrativeUnit WFS 2.0.0 download service</b><br>This dataset is published in the download service (WFS) available at <a href="https://pocinspire.gim.be/wfs/AU.AdministrativeUnit?service=wfs&amp;version=2.0.0&amp;request=GetCapabilities">https://pocinspire.gim.be/wfs/AU.AdministrativeUnit?service=wfs&amp;version=2.0.0&amp;request=GetCapabilities</a> .  | Add to map |
|  | Choose a featurtype to download <input type="text"/>   |            |
|  | <b>WMS GetMap - AU.AdministrativeUnit</b><br>This dataset is published in the view service (WMS) available at <a href="https://pocinspire.gim.be/geoserver/au/wms?with_layer_name=AU.AdministrativeUnit">https://pocinspire.gim.be/geoserver/au/wms?with_layer_name=AU.AdministrativeUnit</a> .  | Add to map |
|  | <a href="https://download.data.public.lu/resources/limites-administratives-du-grand-duche-de-luxembourg/20191005-050300/limadmin-shp.zip">https://download.data.public.lu/resources/limites-administratives-du-grand-duche-de-luxembourg/20191005-050300/limadmin-shp.zip</a>  | Open link  |
|  | <a href="https://data.public.lu/fr/datasets/limites-administratives-du-grand-duche-de-luxembourg/">https://data.public.lu/fr/datasets/limites-administratives-du-grand-duche-de-luxembourg/</a>  | Open link  |

```
<gmd:onLine>
  <gmd:CI_OnlineResource>
    <gmd:linkage>
      <gmd:URL>https://pocinspire.gim.be/wfs/AU.AdministrativeUnit?service=wfs&version=2.0.0&request=GetCapabilities</gmd:URL>
      <gmd:linkage>
        <gmd:protocol>
          <gmx:Anchor xlink:href="http://inspire.ec.europa.eu/metadata-codelist/ProtocolValue/OGC:WFS-2.0.0">OGC:WFS-2.0.0</gmx:Anchor>
        </gmd:protocol>
        <gmd:applicationProfile>
          <gmx:Anchor xlink:href="http://inspire.ec.europa.eu/metadata-codelist/ApplicationProfile/view">INSPIRE Download Network Service</gmx:Anchor>
        </gmd:applicationProfile>
        <gmd:name>
          <gco:CharacterString>AU.AdministrativeUnit WFS 2.0.0 download service</gco:CharacterString>
        </gmd:name>
        <gmd:function>
          <gmd:CI_OnlineFunctionCode
            codeList="http://standards.iso.org/iso/19139/resources/gmxCodelists.xml#CI_OnlineFunctionCode"
            codeListValue="download"/>
        </gmd:function>
      </gmd:CI_OnlineResource>
    </gmd:onLine>
```



- Old-school approach works fine
- Simplified data-service linking approach welcome especially for WFS 2.0.0
- Implementation status in INSPIRE geoportal, ETF-validator, and EEA monitoring not tested