

# Survey of final users, having tested 3 trial datasets implementing INSPIRE



**INSPIRE Conference 2015**  
**Lisboa – May 27<sup>th</sup>**



# PLAN

- CONTEXT & METHODOLOGY OF THE SURVEY
- GATHERED RESULTS
- LESSONS LEARNED

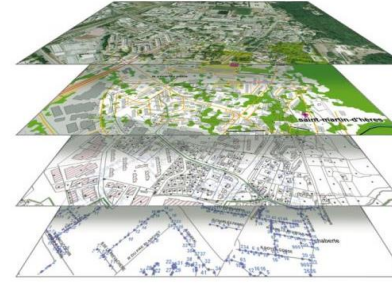
**WHY WANTING TO TEST INSPIRE DATASETS ?**

**HOW TO PROCEED ?**

# CONTEXT - QUESTIONS

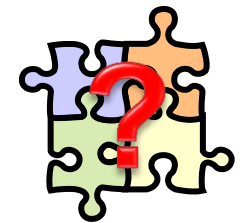
Several facts :

- IGN's mission : distribution of reference data
- Proximity to INSPIRE deadlines (2017-2020)
- Oct. 9<sup>th</sup> 2014 : IGN INSPIRE internal training
- Nov. 18<sup>th</sup> 2014 : French INSPIRE day “*a new start*”



3 questions :

- Feasibility for IGN to produce INSPIRE datasets ?
- Readiness of “mid-” & “end-users” for INSPIRE data ?
- Level of assistance needed ?





# MAIN CHOICES FOR TRIAL DATASETS

Choice of thematic :

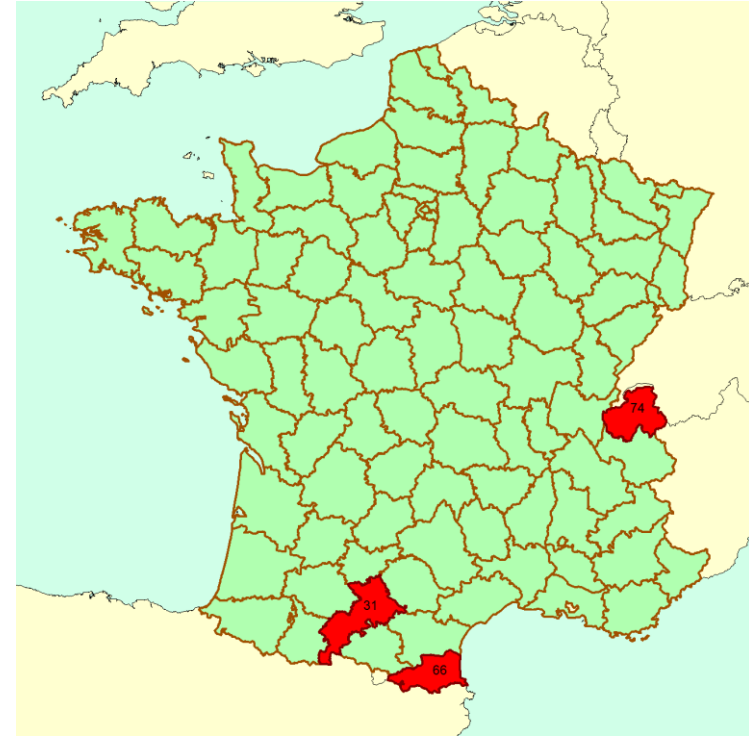
- in Annex I (priority, stability, maturity)
- linked with IGN reference data
- useful for end-users

⇒ **GN, AU & AD**

Locations :

- 3 *départements* (i.e. French NUTS 3)
- On the French border (case of transnational projects)

⇒ **Haute-Garonne (31), Pyrénées-Orientales (66) & Haute-Savoie (74)**



Already 2,88 Gb (+ metadata + documentation)

# SURVEY METHODOLOGY

Access to trial datasets :

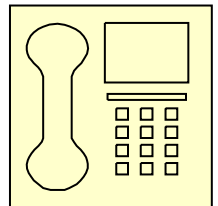
- IGN ftp secure site
- download on IGN professional website : <http://professionnels.ign.fr/inspire-telechargement>
- no webservice (WFS) : focus on format and structuration of the data, not on the delivery

⇒ **2 deliveries : Dec. 12<sup>th</sup> 2014 + Feb. 24<sup>th</sup> 2015**

Contact with “mid-” & “end-users” (e-mail, telephone) :

- invitations + follow-up + “interview guide” preparation / transmission
- telephone interviews : from Apr. 7<sup>th</sup> to May 13<sup>th</sup> 2015 (1hour ½ to 2 hours)
- validation of the memo

⇒ **16 prospects planned and ... 6 interviewed organizations**



Analysis + Presentation of the results (INSPIRE Conference & National webinaire)

**THE RESULTS...**

**... AND LESSONS LEARNED**

# 1<sup>ST</sup> LESSON : NOT EASY TO PRODUCE INSPIRE DATASETS

1<sup>st</sup> step : internal database

The screenshot shows the INSPIRE internal database interface. On the left, there is a sidebar with metadata for a dataset named 'AdministrativeUnits'. It includes sections for 'Contraintes', 'Principes', 'Description', and 'Attributs'. The main area displays a map of France with administrative units. Below the map, there is a table with columns 'AdministrativeUnit (nationalLevel = 4thOrder)' and 'AdministrativeUnit (nationalLevel = 5thOrder)'. The table contains several rows of data, including 'nationalLevel', '1stOrder', '2ndOrder', '3rdOrder', '4thOrder', '5thOrder', and '6thOrder'.

The screenshot shows a Notepad++ window editing the file 'AdministrativeUnits.xsd'. The code is an XML Schema Definition (XSD) for the INSPIRE AdministrativeUnits dataset. It includes imports for the INSPIRE and GML schemas, and defines a complex type 'ResidenceOfAuthorityType' with a sequence of elements: 'name' (type 'gn:GeographicalNamePropertyType') and 'documentation' (type 'text').

Id, registers for localisedCharacterString, etc.

of associated datatypes (e.g. residenceOfAuthority for AU), selection  
ies, etc.

'S 3 level) data distribution : sufficient discretization + question of  
al cleaning)

⇒ using DEGREE + input of INSPIRE schemas = 1 file for GN, 2 files for AU, 5 files for AD

3<sup>rd</sup> step : Data controls + Edition of French accompanying documentation :

- Metadata production : delivery in .XMLI + .HTML formats (no issue with projections ☺)
- Technical documentation on INSPIRE : General description (help to read UML and .GML ; common data types) = 19 pages written in French
- Thematic documentation on the specific dataset : Content descriptions (model description, UML overview of the theme, .GML structuration, Feature type and datatypes description) = 21 (UA), 23 (GN) or 33 (AD) pages written in French

⇒ Because of several controls and tests – including regressions due to the manual initial approach for production = 2 deliveries



## 2<sup>ND</sup> LESSON : NOT EASY TO INVOLVE USERS

Choice to contact “INSPIRE-friendly” clients :

- Already aware of the challenge
- Having begun with metadata (at least) and webservices

⇒ **16 prospects identified and contacted**

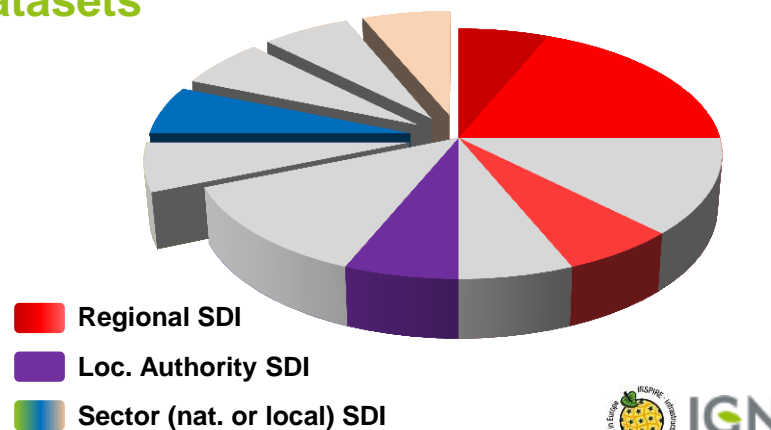
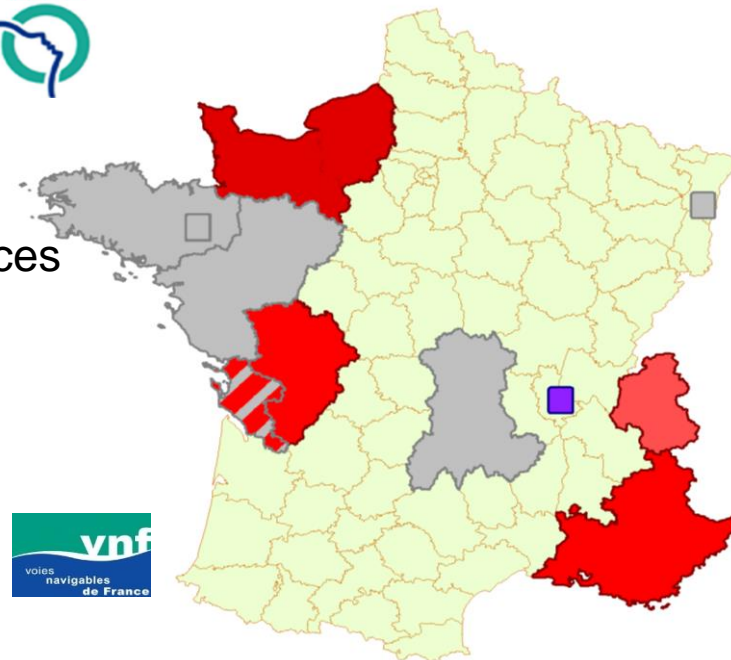
+ solution of self-involvement through IGN's website

After many call-backs, and again :

⇒ **only 6 ½ organizations tested the trial datasets**

Reasons :

- No interested (at all, or for the moment)
- Not enough resources allowed (+ turn-over)
- Not concerned by INSPIRE



# TECHNICAL REMARKS EXPRESSED BY USERS (1)

*IGN was already aware of technical limits and issues with GIS using .GML :*

- 2014 internal study concerning ARCGIS, GEOCONCEPT, MAPINFO, QGIS, OPENJUMP

Use cases of trial datasets / Activated technologies :

- Main purpose for SDIs : **Data distribution** (transformation – integration – providing data to members)
- Technologies : Oracle spatial ; PostGRE SQL / PostGIS ; MS Access ; PRODIGE (French MapServer solution for regional SDIs) ; FME ; ArcGIS server ; etc.

**Difficulties to read .GML files :**

- ArcGIS : need of *Data interoperability* module to read .GML (+ issue if Svc packs not installed), no multiple geometry allowed and even if reading tags, not good implementation
- PRODIGE (MapServer) : cannot accept multiple geometries, or non-geometry tables
- QGIS : splits multiple geometries, but slow navigation for important datasets
- MapInfo : does not read .GML 3.2.1
- FME : not very easy GIS use of .GML, but seems less limited

⇒ **Reflex to save data as usual (.SHP) and come back to former process**

A **bug** was found with QGIS reading the .GML file :

- When finding only figures in the values, the attribute is implemented as numeric, even if “text” in initial .XSD

⇒ **Feed-back to QGIS developers**

## TECHNICAL REMARKS EXPRESSED BY USERS (2)

Same remark by all user who wanted to use the datasets :

- Impossibility to **link** geometry table with semantic ones : lack of correct merging key (for attribute join)

The answer is within .XML/.GML code = the *xlink:href* contains the related reference of the association :

```
...  
<ad:component xmlns:xlink="http://www.w3.org/1999/xlink"  
xlink:href="#AD_ADMINUNITNAME_FR_IGNF_BDUniGE_Adresses_MET_codeINSEE_FR"/>  
  <ad:component xmlns:xlink="http://www.w3.org/1999/xlink"  
xlink:href="#AD_ADMINUNITNAME_FR_IGNF_BDUniGE_Adresses_MET_codeINSEE_66136"/>  
    <ad:component xmlns:xlink="http://www.w3.org/1999/xlink"  
xlink:href="#AD_POSTALDESCRIPTOR_FR_IGNF_BDUniGE_Adresses_MET_codepostal_66000"/>  
      <ad:component xmlns:xlink="http://www.w3.org/1999/xlink"  
xlink:href="#AD_THOROUGHFARENAME_FR_IGNF_BDUniGE_Adresses_MET_codevoie_R_DES_JO  
GLARS_66136#059"/>  
    </ad:Address>  
  </gml:member>
```

⇒ **At our level of knowledge, NO current GIS solution can simply and fully use the *xlink:href* information (relation & navigation)**

Other use case : **treatments and (spatial) analysis** based on .GML files

- ArcGIS, QGIS or FME could not allow to extract, edit or modify part of the data (frozen) + limited queries

⇒ **.GML is not a working/operational format, but only for exchanges**

# FUNCTIONAL/COSMETIC WHISHES REQUIRED BY USERS

Difficulties to show the surface geometry of AU\_AdministrativeUnits :

- QGIS **hides the polygons** that should be visible when reading the entity

It depends on the setup file “.GFS” edition when reading the .GML : a parameter can be changed and geometry appears

⇒ **Proposal : should IGN provide also .GFS files with .GML? How?**

When selecting the boundaries of a dataset for production purpose, neighbour objects outside the *département* are extracted (e.g. AdministrativeBoundaries)

⇒ **Need to clean the datasets = extra developments**

Even after detailed controls, Users found new typos (among codelist values !) or harmonization needed in data values (e.g. spelling mistakes or abbreviation in addresses)

⇒ **Re-Need to clean/correct the datasets**

The attributes labels are not what expected (especially inspireId → gml\_id in QGIS) : is a French version (im)possible?

Same feedback with codelists values

⇒ **Multilingual functionalities are strongly awaited by end-users**

# ORGANIZATIONAL ELEMENTS EXPRESSED BY USERS

The documents and helps through the survey were appreciated :

- At last a usable technical document : short, interesting, useful, written in French...

⇒ **Demystification and democratization process engaged**

Classical unacceptable demands on data :

- keep the former national projection
- recognize / find the former information, even if not INSPIRE (feeling of loss)

⇒ **Proposal : add a mapping table from previous dataset to INSPIRE schema**

... and the support should be more practical :

- Based on the main tasks : data integration and distribution
- Provide a step-by-step guide with the main GIS solution(s) – *QGIS was plebiscited*
- Also discussed : transparency on the .GML production procedure to help other / smaller than IGN data producers

⇒ **Strong need to technical support or accompaniment procedures**

# GLOBAL FEED-BACKS OF INTERVIEWED END-USERS

Even if average time spent on testing the trial datasets is less than 1 day :

- End-users don't feel involved within INSPIRE implementation, qualified of "useless" to them
- They only see constraints (process adaptations), and no help in their daily tasks and needs
- Case of SDI : not producers, not end-users, but key-actors for data distribution

⇒ **Preparation of strong rationale + Support with incentives measures**

But all prospected end-users felt that it will happen and they have to prepare themselves :

- 1<sup>st</sup> time they can practically touch an INSPIRE .GML French dataset
- Other themes would have been really appreciated (HY, TN)

Question of time ? When?

- Time to begin, but not ready to switch to full and sole .GML exchanges
- Scientific curiosity is perceptible, but workload and limited resources don't allow it now

⇒ **Real need to follow-up the motivation of INSPIRE local communities**



# MAIN CONCLUSION

# MAIN LESSONS LEARNED

*Although the survey is really limited and cannot be considered as fully satisfactory, we can express ...*

## ...on the producers' side :

- Not so easy to implement INSPIRE .GML files : Choices and Technical complexity
  - ⇒ **Robust industrialization processing + benchmark with other NMCA's choices + pragmatic simple guidelines for “minor” data producers (step-by-step)**

## ...on the GIS solutions providers' side :

- Urgent need to implement .GML compliant developments :
  - Link management (association / aggregation) : whether “xlink” functional integration, or another simple solution (e.g. semantic/attribute jointure)
  - Multiple geometries, Translation and multi-language uses, complex and multi-type attributes, etc.
- ⇒ **Decision to involve R&D in .GML functional integration : critical for INSPIRE !**

## ...on the users' side :

- Difficulty to involve the resources : Is INSPIRE a priority ? How to mobilize the users ?
  - ⇒ **Strong need for empowerment of users (sensibilization / trainings ; concrete examples / step-by-step manuals ; expertise and consultancy for the main organizations)**



**Thank you for your attention !**

***Any question? ...***

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