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



INSPIRE Conference 2015
Lisboa – May 27th



PLAN

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

WHY WANTING TO TEST INSPIRE DATASETS ?

HOW TO PROCEED ?

CONTEXT - QUESTIONS

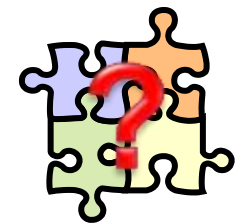
Several facts :

- IGN's mission : distribution of reference data
- Proximity to INSPIRE deadlines (2017-2020)
- Oct. 9th 2014 : IGN INSPIRE internal training
- Nov. 18th 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)



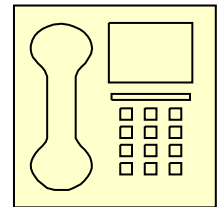
SURVEY METHODOLOGY

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. 12th 2014 + Feb. 24th 2015**

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

- invitations + follow-up + “interview guide” preparation / transmission
- telephone interviews : from Apr. 7th to May 13th 2015 (1hour ½ to 2 hours)
- validation of the memo
⇒ **16 prospects planned and ... 6 interviewed organizations**



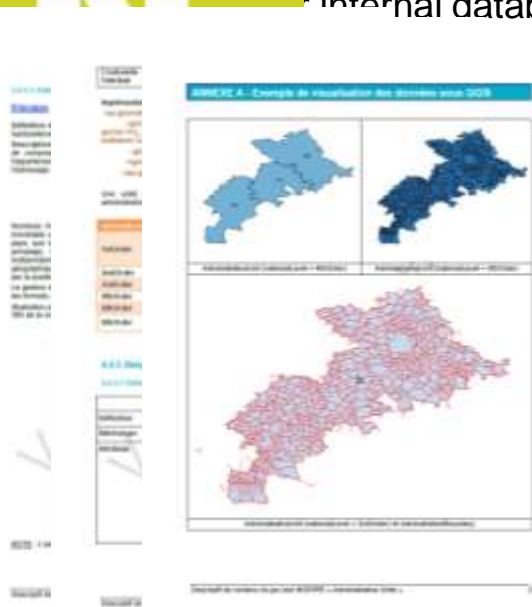
Analysis + Presentation of the results (INSPIRE Conference & National webinaire)

THE RESULTS...

... AND LESSONS LEARNED

1ST LESSON : NOT EASY TO PRODUCE INSPIRE DATASETS

1st step : Data controls + Edition of French accompanying documentation :



```
XML Schema Definition (XSD)
...
<complexType base="xsd:string" name="residenceOfAuthority">
  <base type="xsd:string"/>
  <documentation>
    Data type representing the name and position of a residence of authority.
  </documentation>
  <attribute name="type" type="xsd:string"/>
  <attribute name="name" type="xsd:string"/>
  <attribute name="geometry" type="gml:Geographic3DNamePropertyType"/>
  </complexType>
</schema>
```

and 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

3rd 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

2ND LESSON : NOT EASY TO INVOLVE USERS

Choice to contact “INSPIRE-friendly” clients :

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

⇒ **16 prospects identified and contacted**

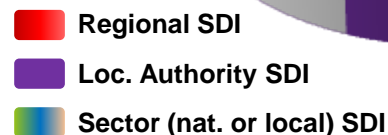
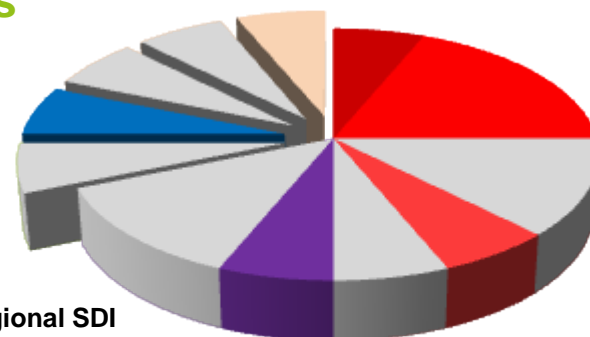
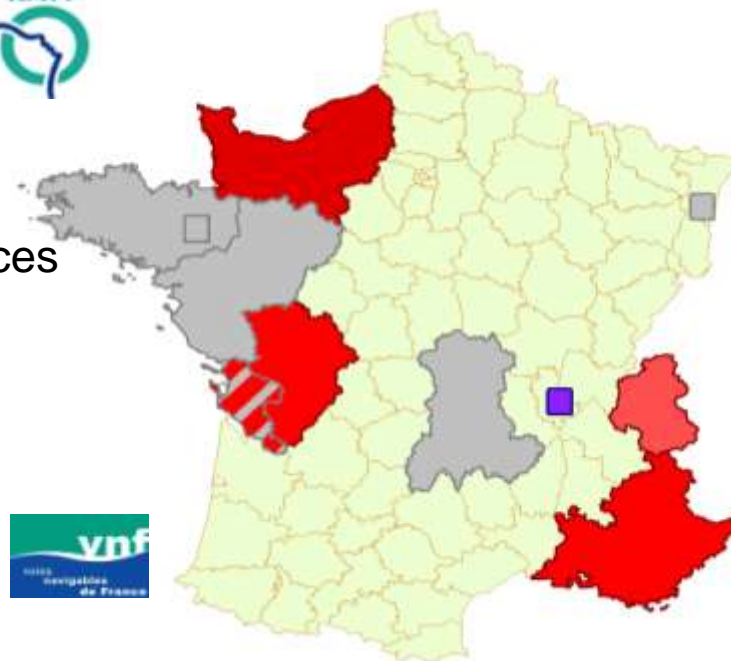
+ solution of self-involvement through IGN's website

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 Svce 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 WISHES 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 :

- 1st 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? ...

www.ign.fr - professionnels.ign.fr