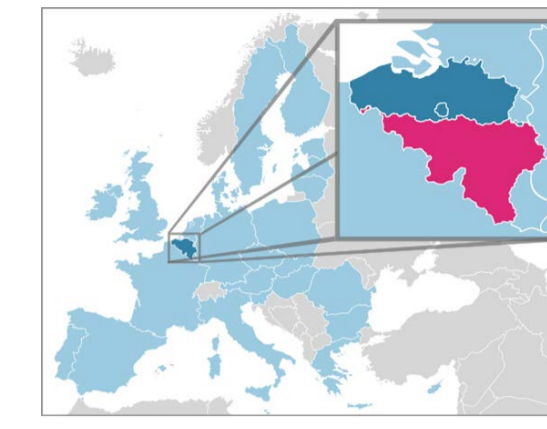


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SPW, Service Public de Wallonie



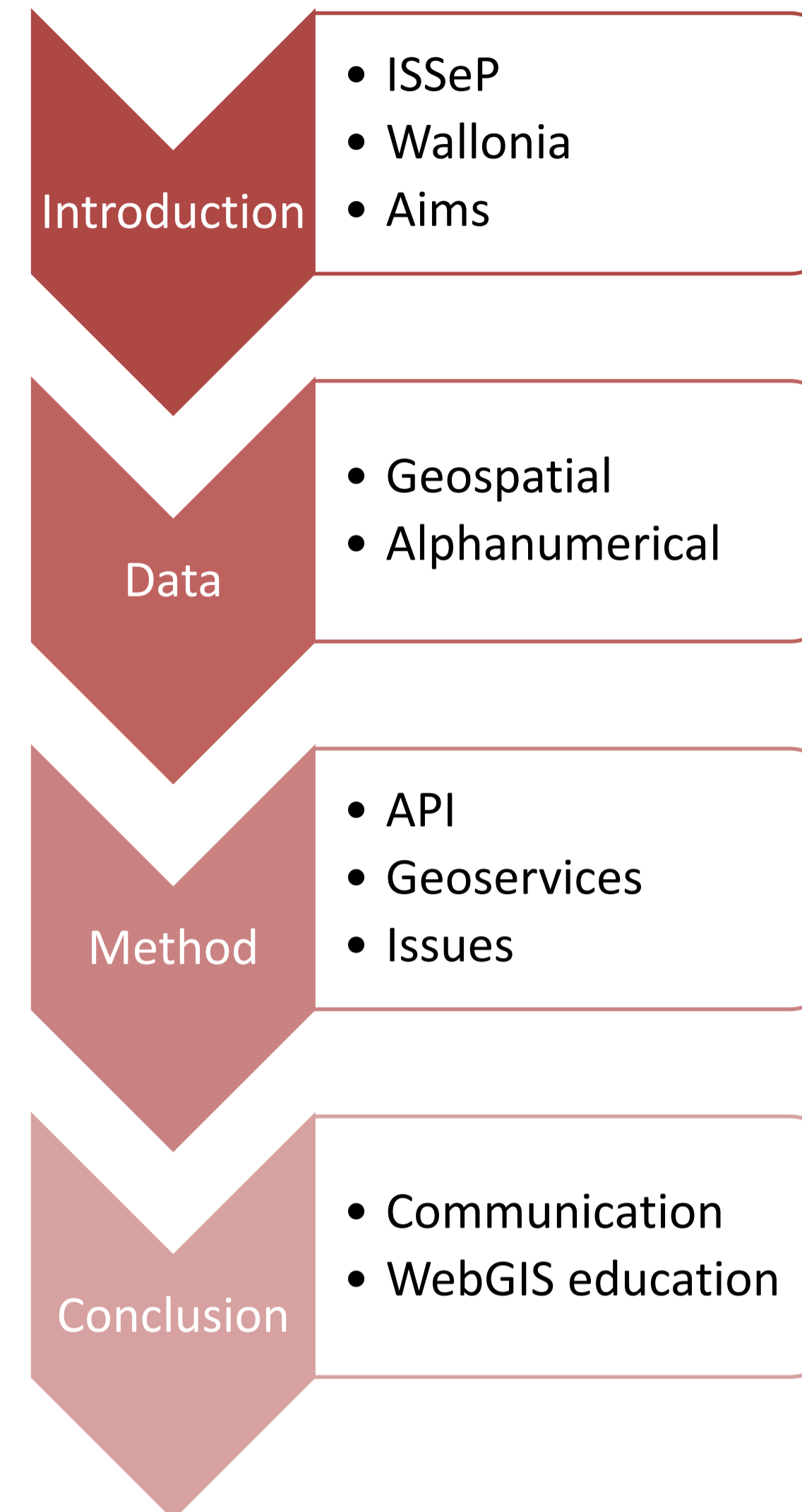
Environmental metrology

Risk assessment

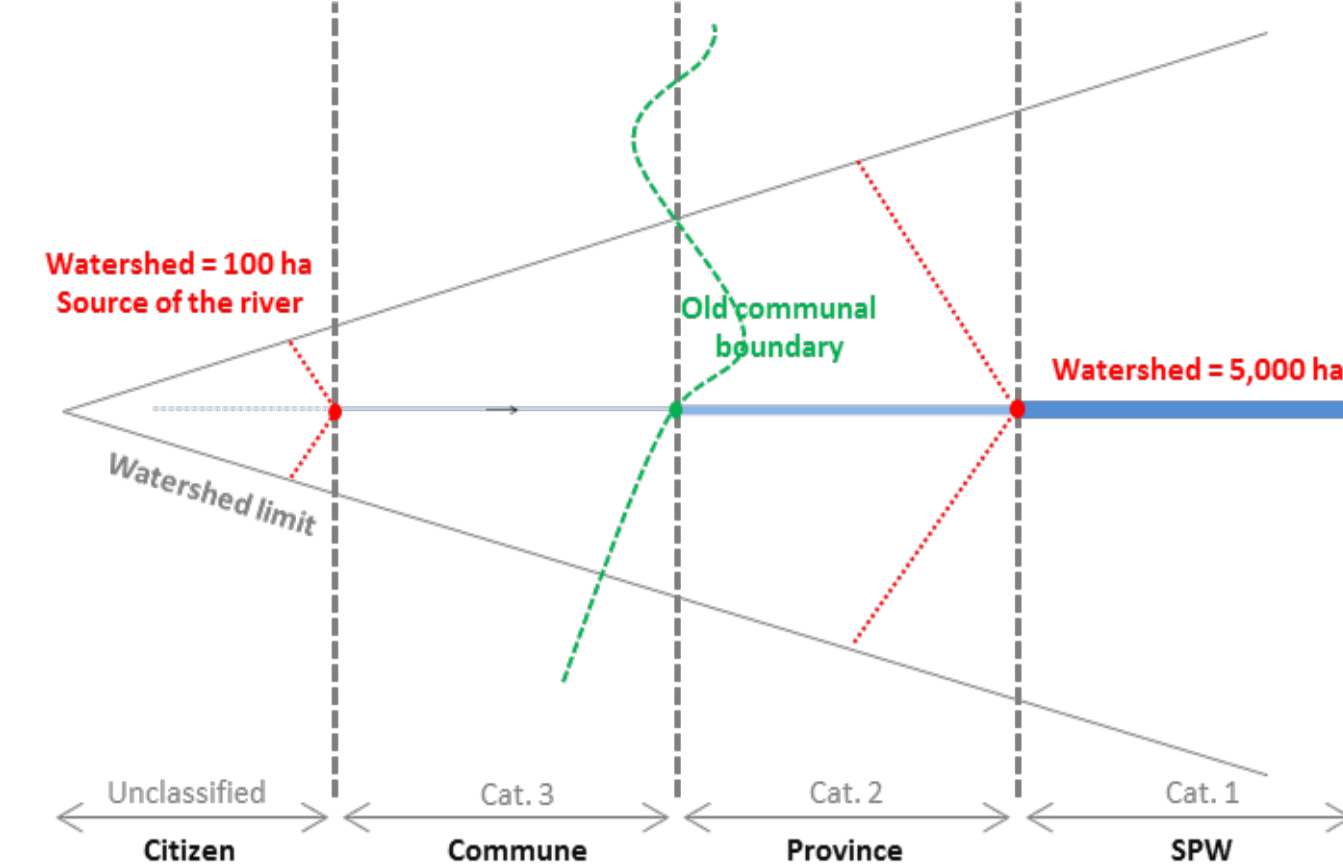
Research and technological development

Context of sediment management in EU and Wallonia :

- Europe's River Basin Management Plans (RBMP) fail to reach the objectives of the Water Framework directive : **80% of rivers in Central EU below the « good » level**
- River **Sediments concentrating the pollutions** (sinks and sources)
- Sediment monitoring** is essential in water management to assess the ecological status and the effect of remedial actions
- There are few information about the level of this pollution and sediment composition has a natural, spatial and temporal variability which need site specific measures
- Wallonia is currently developing the RBMP and wants to develop a **tool to centralise field information on sediments**
- Walloon legislation is under discussion for the levelling of sediments along the banks which would require an authorisation from the administration:
 - New legislation about soil and waste > adaptation of Walloon legislation on sediment propose a « management map » to provide access to information
 - Various information provided by various services in the administration
 - Navigable and unnavigable waterways are separately managed by two services (DGO2 and DGO3). For unnavigable rivers, managers are shared between 4 levels (see figure on the right)



Various stakeholders



Various data

Data sources	format
Hydro Network (DGO3@ SPW)	lines
Discharges (DGO3@ SPW)	points
Ponds/lakes (DGO3@ SPW)	poly
Quality samples (@ ISSEP)	points
Storm basins (DGO1@ SPW)	poly
Sewer plans (@SPGE)	geoserv
Land use map (DGO4@ SPW)	geoserv
Cadastral map (@ SPF)	geoserv
Topographical maps (@ IGN)	geoserv
Orthos and admin. Maps (@ SPW)	geoserv
Natura (DGO3@ SPW)	geoserv

Request to ISSEP:

WebGIS interface > provide data within a common communication channel

WebGIS application using the intuitive aspect of internet and the functionalities of a Geographical Information System (GIS) to combine geodata in an harmonized system.

Objectives:

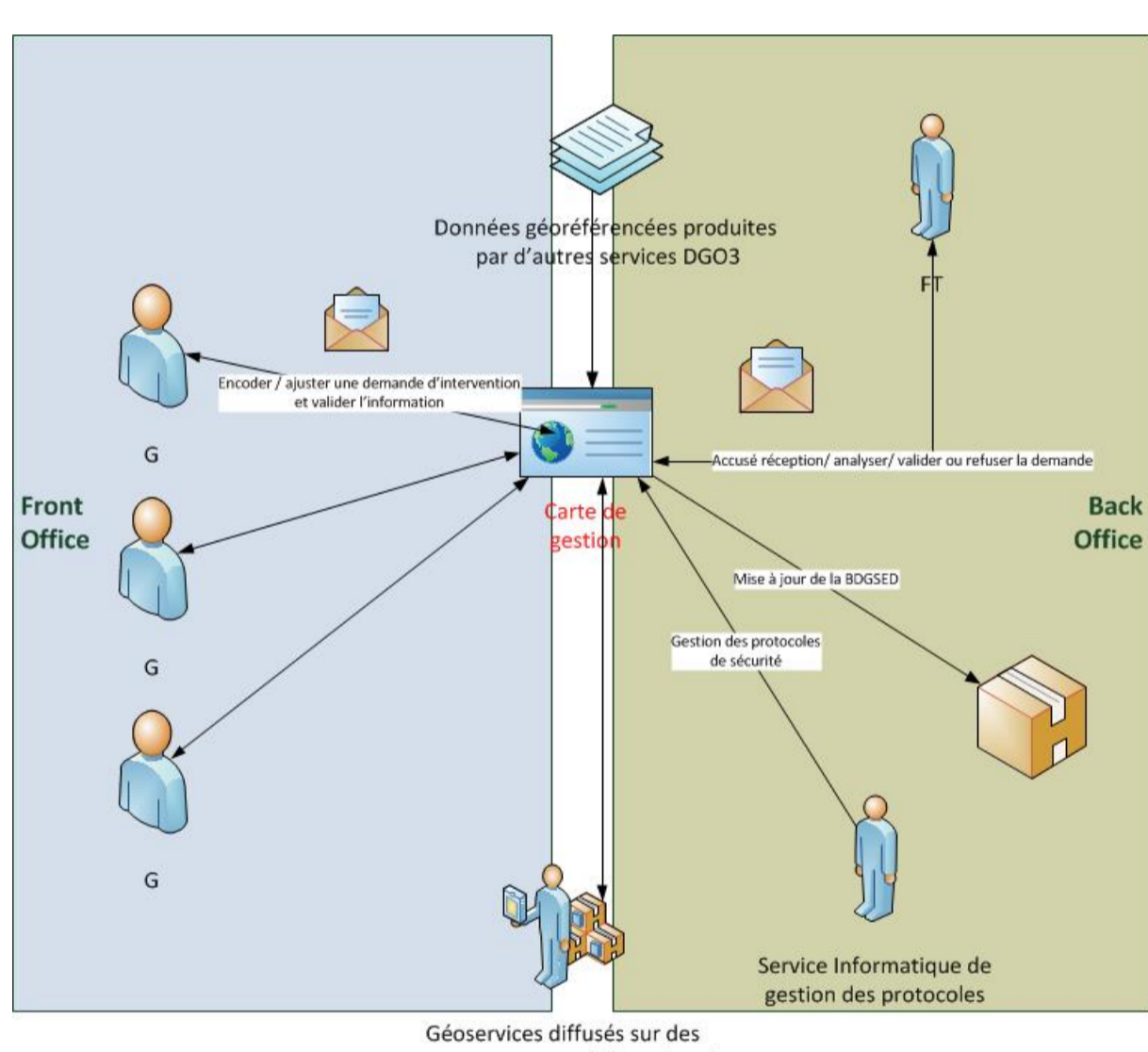
- Harmonise data sources and spatial analysis
- Facilitate the transfer of information between the local manager and the central authority, and other different actors
- Standardize the dredging operations
- Support the managers and the administration in filling out the forms for the authorization
- Harmonize the reports and authorization requests
- Keep track of these operations in a central data base
- Develop adding-values sediments operations
- Provide data while enhancing their relevance and up to date level
- Ensure the traceability of works in line with the legislation
- Having a single consultation GIS interface

Profits:

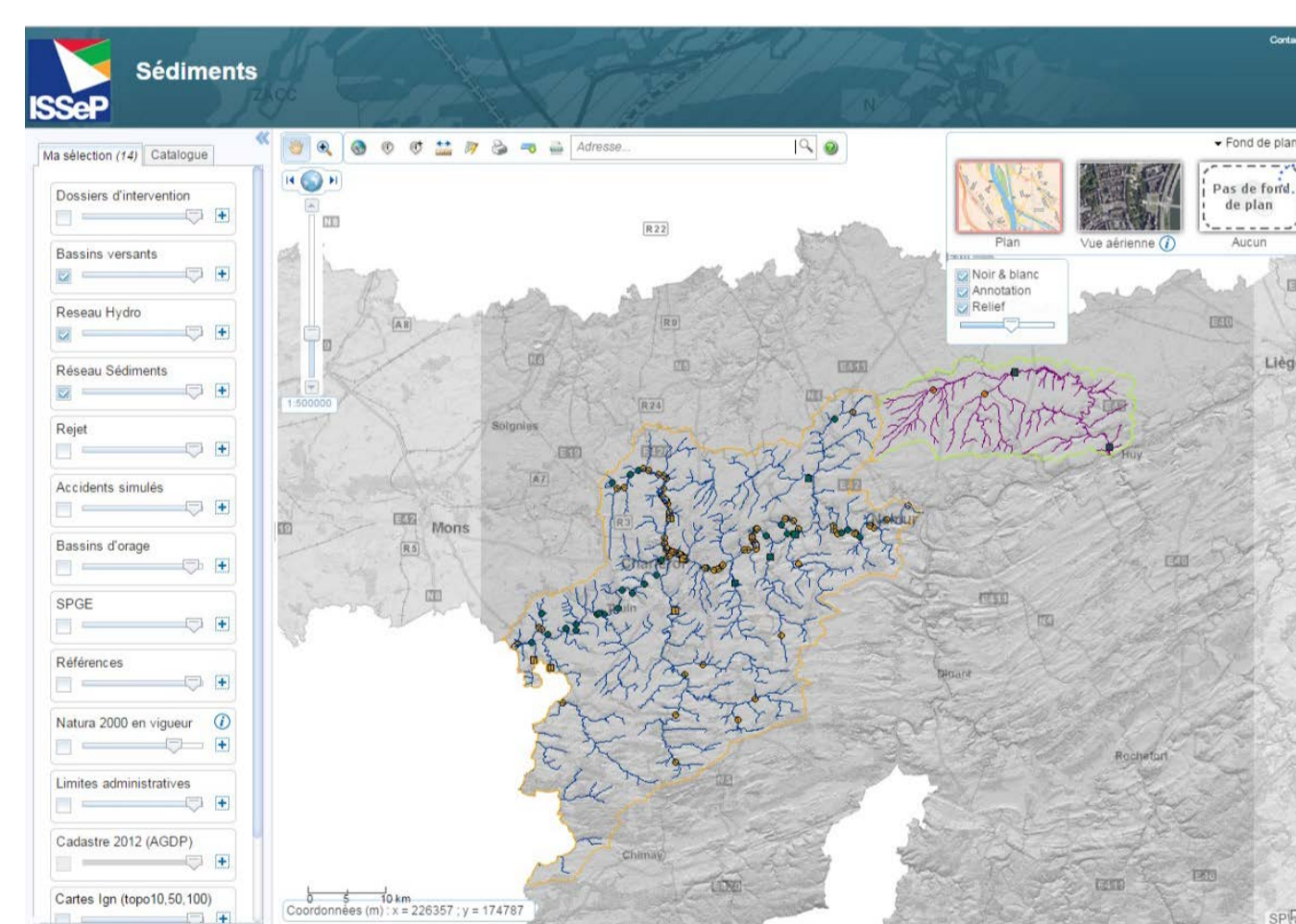
- Time manager (0,5 dm/file)
- Time regional officer
- Delay reduction for authorisations
- Relevance of information : less mistakes and less time to find
- Standardisation / harmonization of report / forms
- Digital information and easiness of database management
- Communication by automatic emails
- Keep track of data exchange and emails
- Support in deadline management – workflow
- Visibility of information to all
- Geodata processing (nearest/buffer/...)

Data Issues :

- Digitalisation with different specifications and methodologies in terms of scale, quality, resolution, ...
 - Official land use map manually digitised on 1/10 000 National Geographical Institute (©NGI) between 1977 and 1987 and scanned to produce the digital version at 1/25000 (DGATLP, 2007)
- Data evolution : new version, on-going validation, low resolution. The prototype includes some temporary data
- Bad geosition in reference to other dataset chosen as the georeference in Wallonia (Ortho-photos, PICC)
- Legal value of digital version ...
 - « Geographical data available from the application have no legal value and are made available to inform the responsible user.» (Official land use map)
- GIS error propagation



Current prototype > operational interface



- Discussion and agreement about tool's objectives within the administration
- Testing needed functionalities and existing ones
- Identifying and obtaining data : analysis of relevance / completion / precision / issues
- Increase the communication between decision levels
- The prototype demonstrates the feasibility but the real version of the tool will be developed in a second phase by the responsible service

API JavaScript Dojo with functionalities from the API JavaScript from ESRI. This protocol is called API geoviewer <http://geoportail.wallonie.be/>

Why a WebGIS ?

- Accessible anytime and anywhere: **common tool** (appropriation)
- Use of the **same, accurate and up to date** spatial information **centralised and validated to all**

Who ?

- Technical / managerial / political actors from **≠ services and levels**: roles, place of work and administration information
- Two roles in the application : **front/back** and emails exchange
- Security** within a group > membership feeling

How ?

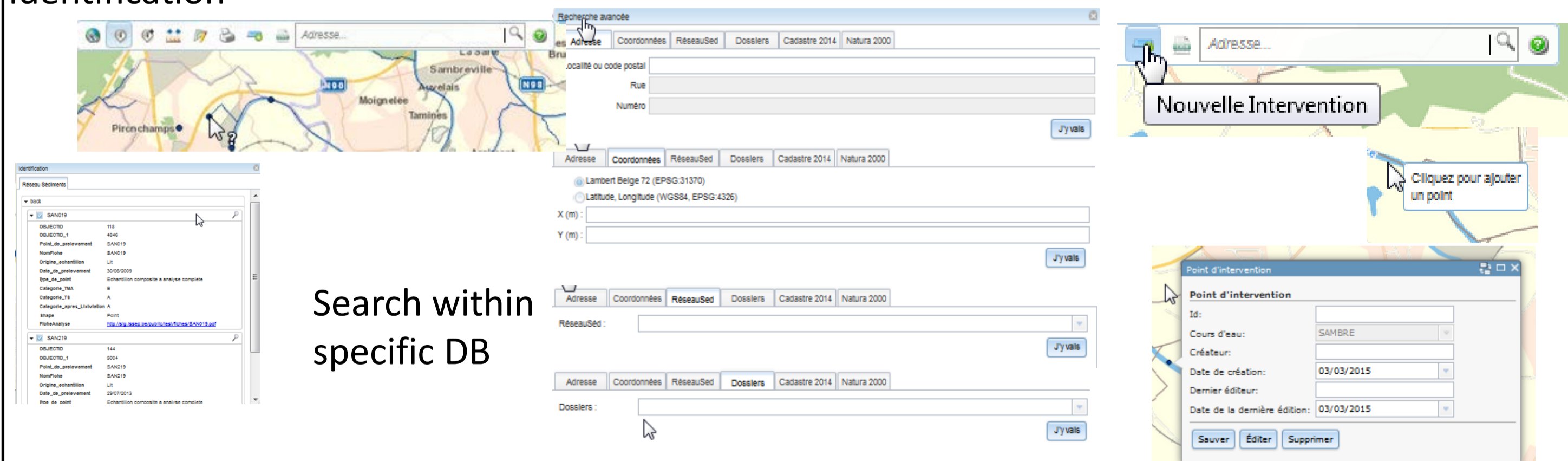
- From paper to **digital** form (easiness, standardization, centralisation, speed, less resources, support to management, spatial analysis...)
- Up to date **geoservices** (remote access to providers)

Conclusion:

- Internet and GIS = **efficient communication tools** : the discussion within the project committee was already improved by the prototype
- List of advantages in comparison to current paper process
- Identification of specific needs of users and existing tools**
- GIS has some issues** such as error propagation and all users are not aware of these : WebGIS needs some caution remarks and **education** in terms of precision / scale / legal value

API generic tools

Identification



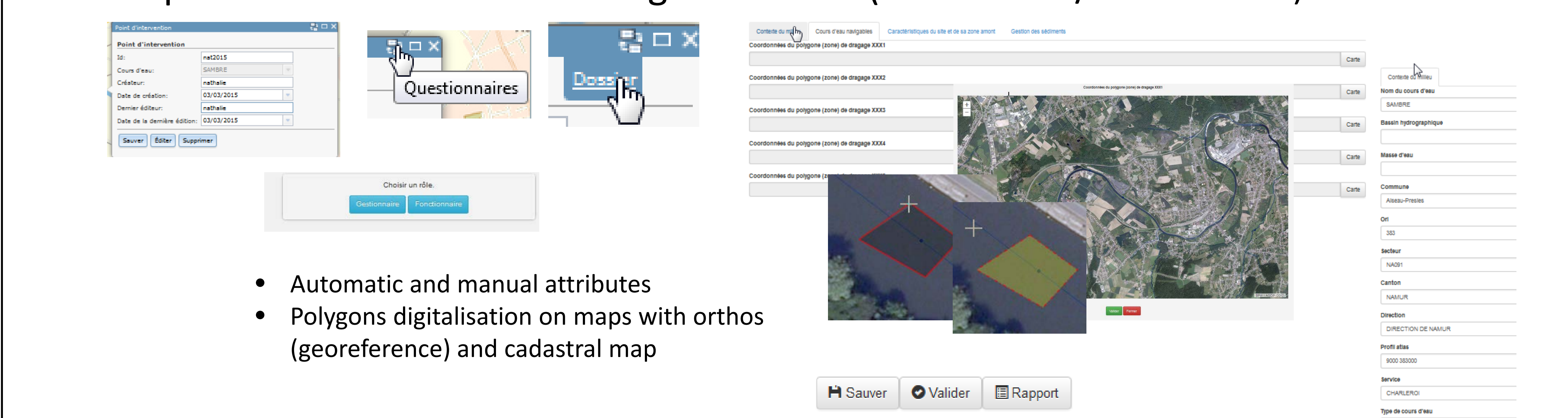
Search within specific DB

measure, drawing, print, uploading csv

Edition of the point layer

- Add a point to localise the dredging
 - Click on the widget
 - Click on the river or lake (automatic **snapping**)
 - Legend to be completed:
 - ID (manually)
 - Name of the river (filled automatically)
 - Name of responsible
 - Date
 - Last edition
- Moving or deleting this point > update all information

Link to alphanumeric form according to the role (back office / front office)



- Automatic and manual attributes
- Polygons digitalisation on maps with orthos (georeference) and cadastral map