THE SPATIAL DATA INFRASTRUCTURE OF SPAIN AS AN EXAMPLE OF SUCCESS IN EUROPE

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Summary

- Geographic Information data sources
- The need for harmonisation
- IDEE Project (National Spanish Spatial Data Infrastructure).
- IDEE Project funding
- IDEE Geoportal
- IDEE Legal Framework
- New data policy
- Conclusions

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Public Administration in Spain

- 1) National Level
  - Government of Spain (14 Ministries managing GI)
- 2) Regional Level
  - 17 Autonomous Regions
  - 2 Autonomous Cities
- 3) Local Level
  - 811 Municipalities
  - 47 Provincial Gov.
  - Consells Insulars
  - Island Council

The need for harmonisation

- Geographic Information from several data providers
  - Processes to transform and load it into the user GIS system.
- An easy and less expensive way is to use web services provided by other organisations: SDI
  - Interoperability, based on standards and common specifications
  - Harmonisation, to cooperate in order to harmonise geographic information produced by different authorities or to produce jointly a new one shared and co-owned by several authorities.
**The National Plan for Aerial Orthophotography (PNOA) (25/50 cm)**

Funding:
- 66% National Gov
- 34% Regional Gov

**Information System of Land cover & Land use in Spain (SIOSE).**

Production of land cover/land use database in a cooperative way between the national and the regional administrations
- Nominal scale: 1:25.000
- Updating period 5 years
- Funding:
  - 66% National government:
  - 34% Regional governments
Objectives

- Routing with geographical continuity in the whole national territory. BCN25 of the IGN will be used as infrastructure to assure continuity.

- Direct: Coordinate Assignment: \( \phi, \lambda \)
- Reverse: Assignment
  - Postal Address
  - Geo-name
  - Point of interest (POIs)
  - Postal District
  - Census Section

Spatial position:

- Urban and rural areas displaying

- Thematic Uses. Dynamic feature symbolism.

Data sources

- Cadastre:
  - Blocks
  - Urban Parcels
  - Buildings
  - Street axis
  - Houses numbers
  - Toponomy

- Statistical Office (INE): Street names, Census Districts & Sections.

- Post Office: Postal Codes.

- National Geographic Institute (IGN): BCN25 & PNOA Orthophotographies
The IDEE Project (National Spanish Spatial Data Infrastructure).

- NSDI (IDEE): Collaborative project based on cooperation and agreement among different actors.
- Involving every national stakeholder: national, regional and local governments, academia, companies.
- According to the Spanish Administrative Organization:
  - Who can develop and coordinate an NSDI?
  - Who can act as the NSDI interface in front of European Union, United Nations, etc?

**CONSEJO SUPERIOR GEOGRÁFICO**
(National Geographic High Council)
NSDI: National Geographic High Council

- Ministry of Infrastructure & Transports
  - NATIONAL GEOGRAPHIC HIGH COUNCIL
    - Advisory body
      - MISSION: Planning & Coordination of Cartography
      - Royal Decree 1545/2007, Chapter VI reorganizes NGHC.
    - Representatives
      - 14 Ministries
      - 17 Regional Governments
      - 6 from Federation of Local Authorities
    - Technical Secretariat: IGN Spain
    - Commission on SDI
      - WG IDEE (NSDI): > 300 members from Governments, Academia, Companies.

IDEE Architecture

- IGN
  - Web Services
    - BCN PNOA CartoCiudad

- Cadastre
  - Web Services Cadastral GI

- Agriculture
  - Web Services Ortophoto

- Services providers
  - Heavy clients
  - PDA

- Internet
  - Heavy clients
  - Browser

- Services providers
  - Catalonia
  - Navarra
  - Galicia
  - Andalucía
  - La Rioja
  - Castilla y León
  - Zaragoza
  - Pamplona
  - Getafe

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The IDEE Project funding

- Transformation cost
  - Every agency assumes its data transformation cost
- Harmonisation cost
  - Multilateral or bilateral projects: Cost shared by partner agencies.
- SDI services implementation & maintenance cost: Investment of service provider Agency.
- SDI Geoportals implementation & maintenance cost: Investment from Government (National/Regional/Local) budget.
- NSDI Geoportal (IDEE) implementation & maintenance cost: Investment from IGN-E budget as NGHC’s Technical Secretariat
  - Implementation & maintenance cost: 1.5 M€/year (2006-2008)

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The IDEE Geoportal: www.id ee.es
Spanish SDI Geoportal

- Geoportal opened 2004-06
  - 7 languages: 🇪🇸 🇫🇷 🇪🇸 🇪🇸 🇪🇸 🇪🇸 🇪🇸 🇪🇸
  - 9 OGC Services:
    - WMS, WFS, WFS-Gaz, WCS, CSW, WMC, WCTS, SLD, WPS

National Level
- 6 Ministries involved

Regional Level
- 16/17 Regions

Local Level:
- > 300 Nodes

Lot of thematic and specific SDI projects
- > 30

IDEE Geoportal: Some figures

- Gazette > 500,000 geonames (WFS/MNE)
- Map Viewer:
  - > 500 services
  - >6,500 layers available
  - Monthly
    - > 85,000 visits from January to April 2009.
    - > 28,000,000 individual requests to the services in April 2009.
    - > 6,300,000 individual request to WMS IDEBase service.
    - > 20,200,000 individual request to WMS PNOA service.
    - > 1,500,000 individual request to other WMS service.
    - From 105 different countries
- Metadata Catalogue > 40,000 datasets IGN&ICC + Free software application (CatMDEdit)
- Services Catalogue (OGC services capabilities information)
- Data download (GML)
- WFS analysis (Corine Land Cover)
- WCS –Relieve Analysis
- WCST- Coordinate Transformation
- Create symbolization (SLD)
- Set of software tools as freeware: viewer, PDA client, ..
Gazetteer

Cadastre WMS Mapping Service
IDEE Legal Framework

From experience running in a collaborative way IDEE since 2003 first NSDI legal regulation was developed on 2006-2007

- Royal Decree 1545/2007, Nov 23rd 2007, defining the National Cartographic System (SCN)
  - Proposed by National Geographic Institute (IGN) of Spain and agreed with every official Spanish GI producer (National, Regional, Local)
- Royal Decree 1545/2007 defines:
  - The National Reference Geographic Data (NRGE)
  - Official Cartographic Production Planning
  - Central Cartographic Register
  - Geographic Information National Infrastructure NSDI according INSPIRE Directive
- Some Autonomous Communities (Regions) have Regional Laws where aRegional SDI is set up:
  - Catalonia
  - Andalusia

IDEE Legal Framework

- After Directive 2007/2/CE approval (14th March 2007)
  - Ministry of Foreign Affairs and Co-operation set up a Committee for Directive transposition:
    - Ministry of Infrastructures and Transports (Chair)
    - Ministry Environment
    - Ministry Economy and Finances
    - Ministry Agriculture
    - Ministry Industry, Tourism and Commerce
    - Ministry Public Health
  - Committee for Transposition = New Law Drafting Team
    - End May 2008: First draft ready
    - July 2008: Draft sent to the Regions representatives at NGHC in order to get their amendment proposals.
    - November 2008: Draft submitted to the IDEE WG in order to get their amendment.
    - March 12th 2009 final draft approved by NGHC.
    - March 18th 2009 final draft sent to the National Government
- After agreement from all Ministries and National Government approval it will be send to the Parliament
New data policy

- Taken into account new aspects due to SDI and harmonisation on access and use of GI in Spain:
  - INSPIRE Directive legally bounding to the Member States to set up geo-portals giving access to geographic data and services.
  - In Spain every day more GI is co-owned by several authorities, in many cases from different Governments => Need for harmonisation on data policy.
  - Regional Governments and Ministries at the National Government have set up data policy on the idea that opening the access to GI information, it helps to increase very significantly GI business and this is clearly good for the Governments incomes due to taxation on the companies.

New data policy

- IGN Spain has changed its regulation for data policy. New data policy to be establish as:
  - Open access to GI data and services
    - N.R.G.E. + Metadata = Public Sector Information = Free access, free use, free of charge
    - No licence for N.R.G.E. and Metadata download
  - Non commercial use = Free access, free of charge, but mention of origin and ownership.
  - Services for viewing, analysis and geoprocessing on line
  - Free of charge by Internet
  - Downloading
    - By Internet (IGN/CNIG+Cadastre+Regions+....)= Free of charge for non commercial uses
    - Click licence, creative commons or equivalent
  - Commercial use (CNIG/IGN)= Agreement/contract with CNIG
  - Direct internal use at companies
    - To be integrated in company Management systems = Non commercial use
    - Can be published on Internet giving added value to the original GI when the uses are not commercial.
Conclusions

- The SDI need for harmonisation and interoperability has promoted several collaborative GI production projects in Spain (PNOA, SIOSE, CartoCiudad)
- National SDI of Spain = IDEE
  - Collaborative project based on co-operation & agreement
  - According to INSPIRE principles
- National Geographic High Council
  - Promoting, driving, developing NSDI
  - Interface in front of European Union, United Nations, …. (GT IDEE)
  - IGN-E: Coordination, technical support
- IDEE funding: Sharing costs among public sector.
- IDEE Geoportal and Spanish Geoportals: Interoperability & Technology
- NSDI (IDEE) set up by Royal Decree 1545/2007
  - INSPIRE transposition Law: To be sent to the Parliament
- Data policy: Open access to GI data and services
  - Free of charge by Internet
  - Commercial use (CNIG/IGN)= Agreement/contract with CNIG

Thanks

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