“Spatial Enablement in Europe- the status of initiatives and the role of Land Administration”

Bas Kok

UN Sponsored

4th Land Administration Forum for the Asia and Pacific Region
10 Year Anniversary Celebrations Centre for Spatial Data Infrastructures & Land Administration

University of Melbourne
6th October 2011
Contents of presentation

• Status successful SDI initiatives and implementations in some European countries (Denmark, Finland, Netherlands, Norway, Spain, Sweden)

• Infrastructure for Spatial Information in the European Community (INSPIRE)

• Attention to:
  • Overall European SDI development
  • European programmes

• Points for consideration and conclusions
Accenture eGovernment Assessment Ranking Programs

Successful categories (Hunter & Jupp)

- Innovative leaders (US, Canada and Singapore)
- Visionary followers (Norway, Finland and Australia)
- Steady achievers (New Zealand, France)
- Platform builders (Japan, Brazil, Hong Kong)
INSPIRE (Infrastructure for Spatial Information in Europe) is an initiative launched by the European Commission and developed in collaboration with Member States and accession countries. It aims at making available relevant, harmonised and quality geographic information to support formulation, implementation, monitoring and evaluation of Community policies with a territorial dimension or impact. INSPIRE intends to trigger the creation of a European spatial data infrastructure that delivers to the users integrated spatial information services linked by common standards and protocols.

The INSPIRE Geo-Portal is Europe’s Internet access point for Spatial Data and Services. From here, you can search for spatial data, services, and organisations.
INSPIRE process

Commission Services co-ordinate

INSPIRE Expert Group advises

INSPIRE Committee votes

EC adopts

Call for Interest

Existing Reference Material

Drafting Teams

Consolidation Team

Prototypes test

Pilots validate

LMOs review

Public reviews

MS apply

Experts are proposed

Projects contribute

CEN, ISO, OGC contribute

Spatial Data Interest Communities participate

Association phase

Drafting phase

Review phase
Inspire success

• Fast decision making process
  - Adoption INSPIRE Directive European Commission: July 2004
  - Approval by European Council and European Parliament 2007
  - INSPIRE Directive entered into force in May 2007
• Inspire process: sophisticated and interactive between:
  - EU officials
  - Professionals of the Geo spatial community in EU
INSPIRE framework

- Different Policies and standards
- Europe is moving 3cm/year
- Different sea levels in Europe
- Need to create pan-European spatial data sets

Spatial Data Infrastructure

GI Institutional framework

GI technical standards

Fundamental and thematic GI data sets

Spatial Information Services

Meteo data

Catchments

Land Cover

eEurope : eGovernement on line
INSPIRE

Ambitious targets

• Three **important core data clusters**
  • Three annexes
    • Important reference core data sets
    • Essential/crucial data sets
    • such as: Land Information/Cadastre
    • Thematic data set
Annex I

1. Coordinate reference systems
2. Geographical grid systems
3. Geographical names
4. Administrative units
5. Transport networks
6. Hydrography
7. Protected sites

Annex II

1. Elevation
2. Addresses
3. Cadastral parcels
4. Land cover
5. Orthoimagery
6. Geology
Annex III

1. Statistical units
2. Buildings
3. Soil
4. Land use
5. Human health and safety
6. Utility and governmental services
7. Environmental monitoring facilities
8. Production and industrial facilities
9. Agricultural and aquaculture facilities
11. Area management/restriction/regulation zones & reporting units
12. Natural risk zones
13. Atmospheric conditions
14. Meteorological geographical features
15. Oceanographic geographical features
16. Sea regions
17. Bio-geographical regions
18. Habitats and biotopes
19. Species distribution
20. Energy resources
21. Mineral resources
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<th>Article</th>
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<td>Submission for opinion of the INSPIRE committee of IR for discovery and view services</td>
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<td>Provisions of Directive are brought into force in MS</td>
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<td>21(4)</td>
<td>Adoption of COMMISSION DECISION regarding INSPIRE monitoring and report</td>
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## Excerpt from Roadmap (adoption)

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<td>2012-05-15</td>
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<td>Submission for opinion of the INSPIRE committee of IRs for the interoperability of spatial data sets and services for Annex II and III spatial data themes</td>
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<td>Implementation of provisions for monitoring and reporting</td>
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<td>2011-10-19</td>
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<td>Discovery and view services operational</td>
</tr>
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<td>2012-06 Date proposed by commission</td>
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<td>Newly collected and extensively restructured Annex I spatial data sets available</td>
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Successful SDI developments in Europe
Denmark
National mapping survey strategic partner e government program

- Danish E Government Strategy 2007-2010 “Towards better digital service, increased efficiency and stronger collaboration”

- Minister Poulsen of Environment in 2008

- “Policy Plan Geographic Information as part of E-government Strategy”

- Spatial Service Community: Chair National Survey Denmark

- Digital Framework for Geodata

- Denmarks Infrastructure for Spatial Information Act (May 2009)
National Survey & Cadastre, Denmark

Location – a gateway to e-Government

strategic objectives
2007-2010
Denmark
National mapping survey strategic partner e government program

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• Digital Framework for Geodata

• Denmarks Infrastructure for Spatial Information Act (May 2009)
National Survey and Cadastre, Denmark

- Denmark’s central public source of geographic data

- National coordinator of surveying, mapping & registration of spatial information

- National authority for NSDI, surveying, mapping, charting, cadastral data and licensing surveyors
Denmark
National mapping survey strategic partner e government program

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• Denmarks Infrastructure for Spatial Information Act (May 2009)
National Survey and Cadastre, Denmark

is responsible for implementation of the INSPIRE directive in Denmark

The law creates connections to eGovernment

LOCATION - a gateway to e-Government
Infrastructure for Spatial Information Act
Passed by the Danish Parliament 9 December 2008
Denmark
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Norway
Norwegian mapping authority leading role

• International standardization and innovation network
  ISO and IHO: virtual technology network

• Developing Virtual Platform Norway
  Cooperation with 600 local and regional partners

• Digital Norway
  Geo Data Platform Geonorge

• Essential role in Government Document “White Paper Public Information”

• Digital Norway became part of Norway’s E government programs
  Government’s Policy Document Information Society Norway
The model

Free of charge internet solutions

Government owned company

Commercial users

VAR

Public users outside ND

Extranet between partners

Norway digital

Municipalities

Counties

Distributers
Geodata portal - geonorge.no
Norway
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  Government’s Policy Document Information Society Norway
Political background

  (The Ministry of the Environment)

• eNorway 2009  
  (The Ministry of Government Administration and Reform)

• Parliamentary White Paper (2006-2007) on ICT policies  
  (The Ministry of Government Administration and Reform)
Norway
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  Government’s Policy Document Information Society Norway
Finland (1)
National Land Survey of Finland leading role

- Long tradition cooperation/coordination geoinformation
  - Uniform Topographic Map 1:20,000 → 1950
  - First Portal → 1990’s

- Strong international strategic network
  - UN
  - Polar SDI
  - Geodesy Chain Central Europe
  - International Organisations: Eurogi-Eurogeographics-INSPIRE-GSDI
National Council for Geographic Information

Tasks:
• Follow-up development of the NSDI
• Follow-up implementation INSPIRE
• Handling INSPIRE Implementation Rules and Guidelines
• Handling national guidelines for the SDI implementation
• Handling terms of use for the national geoportal
• Writing initiatives and statements

Membership:
• 7 ministries
• Agencies, municipalities, researchers, private sector
SDI in Finland

• The national geoportal (developed by the National Land Survey) will be the main entrance to national and local spatial datasets and services
  • the pilot of geoportal was launched in May 2009
  • New version in June 2010
  • The development of spatial data infrastructure and geoportal is a huge task for cooperation among the Finnish GI community

• The National Council for Geographical Information was formed in early 2010 according to the GI Law
  • Secretariat by National Land Survey of Finland

• In addition: National INSPIRE-network (voluntary based, open to all)
  • To help the implementation of SDI
  • Best-practice networking
  • Voluntary participation in development of the National Geoportal
  • Development of conditions for use of spatial data
National Geoportal – pilot for view services
From feature info to direct access download
One Geoportal – many map windows
eGovernment structure
INSPIRE / SDI Authorities in Finland
nominated in the act of the SDI
(1.1.2010-)

**State authorities:**
- Environment Institute
- National Land Survey
- Meteorological Institute
- Transport Agency
- Geological Survey
- Statistics Finland
- Population Registry Centre
- Agency for Rural Affairs
- Natural History Museum
- Game and Fisheries Research
- Forest Research Institute
- National Forest Agency
- Food Safety Authority
- Agrifood Research
- Agriculture and Forestry Information Centre
- Board of Antiquities
- Defence Forces
- Transport Safety Agency
- Institute for Health and Welfare
- Energy Market Authority
- Ministry of Employment and the Economy

**Regional authorities:**
- economy, transport and environment centres (15)
- regional councils (19)
- forestry centres (13)
- search and reque units (22)

**Local authorities:**
- municipalities (326)
Finland (2)
National Land Survey of Finland leading role

- National Council for Geo Information established by Government in 2004

- National Geographic Information Strategy Plan 2005-2010
  *For Finnish Government Information Society Policy Program*

- National Geo Portal NLS: June 2009
  *Feature National Basic Information Pool E Government*

- Important role in communication and commitment building
  - SDI Act
  - 21 State Authorities included
  - INSPIRE Implementation
Sweden
NLS Sweden makes national geodata strategy for government

• Content:
  • INSPIRE implementation strategy
  • Framework for other EU Directives/initiatives
  • Strategic linkage with Swedish Action Plan E government

• Leading role in geo data advisory board

• Swedish geodata strategy: ten year action plan:
  • Linkage NSDI to:
    • Public Sector Administration
    • Private Sector
    • Swedish Citizens

• Relation europe: INSPIRE, PSI Directive, SEIS, GMES
Cluster of co-operating agencies

- Geodata portal
- My company portal
- Company portal
- Geodata
- Service license portal
- Harmonization of business support
- EU Service Directive
- CAB
- Driving license portal
Sweden
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- Swedish geodata strategy: ten year action plan:
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    - Private Sector
    - Swedish Citizens

- Relation europe: INSPIRE, PSI Directive, SEIS, GMES
Lantmäteriet’s role as coordinator

- National responsibility for coordination of basic geographic information and property information (geodata).
- Coordination and support to implementation of EC Directives within the GI sector.
Sweden
NLS Sweden makes national geodata strategy for government

• Content:
  • INSPIRE implementation strategy
  • Framework for other EU Directives/initiatives
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• Relation europe: INSPIRE, PSI Directive, SEIS, GMES
Spain (1)
IGN one of keydrivers behind SDI development

- Results of integration SDI in geo spatial technologies
  Arrangements:
  - agencies central level
  - cooperation autonomous regions
  - research communities and universities
  - private sector

- Royal Decree for SDI
- National High Council for Geography
- IDEE Geo Portal very successful
NSDI: National Geographic High Council

- Ministry of Infrastructure & Transport
  - National geographic high council
    - Advisory body government
      - MISSION: Strategy & Coordination of Cartography
    - Set up by Royal Decree 1792/1999
  - Representatives
    - 7 Ministries
    - 17 Regional Governments
    - 2 Federation of Local Authorities
  - Technical Secretariat: IGN Spain
  - Commission on Geomatics
    - WG IDEE (NSDI)
Spanish SDI Geoportal

• Geoportal opened 2004-06
  • 7 languages:
  • 8 OGC Services: 🇪🇸 🇫🇷 🇪🇺 🇧🇪 🇩🇪 🇬🇧 🇳🇱 🇫🇮
    • WMS, WFS, WFS-Gaz, WCS, CSW, WMC, WCTS, SLD
• National Level
  • Many of the INSPIRE Annexes I & II covered via WMS & WFS
  • 7 Ministries involved
• Regional Level
  • 14/17 Regions (+ 3 on progress)
• Local Level:
  • > 100 Nodes
  • Lot of thematic and specific SDI projects
    • > 20
SDI Spain
Sustainable urban development

- Ambition: mix of functions
- Masterplan for energy supply and other services
- Masterplan for traffic and transport
- Architecture and choice of building materials
- Solution for extreme precipitation and heat stress
- Intensive use of the land
- Reuse of industrial areas
Spain (2)
IGN one of keydrivers behind sdi development

RESULTS:
• High level of cooperation
• Technological innovations
• Evolution public agencies use of technologies (example Spanish Cadastre)
  • Database
    • 32 million properties; 42 million rural parcels; 23,5 million owners
    • in 7575 municipalities
  • Integrated Virtual Office
    • 122 million maps in 2009
• INSPIRE user oriented approach
Netherlands (1)
Dutch cadastre key access role authentic registers

- Strong cooperation between GI partners
- SDI vision (Structure plan for GI) approved by Council of Ministers in 1993
- Space for Geo Information Innovation 40 million Euros Program
  - 20 million by Government
  - 20 million by Research, University and Private Sector Partners
Infrastructure framework (1992)

- Administrative
  - population
  - cadastre
  - enterprise
  - buildings

- Link
  - address

- Geometric
  - 1:10,000
  - 1:1000/2000
  - topographic set
Netherlands (1)
Dutch cadastre key access role authentic registers

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Netherlands (2)
Dutch cadastre key access role authentic registers

Dutch Cadastre important key driver: Responsible for Authentic Registers:
  • Cadastre
  • Topography
  • Buildings
  • Subsurface information
Kadaster information hub in eGovernment

- Key register cadastre
- Key register topography
- Distributor building and address information

(Possible) future tasks:
- Distributor large scale base map
- Distributor planning/zoning information
- Distributor valuation information
- Distributor sub-soil information
GIDEON – Key geo-information facility for the Netherlands
Approach and implementation strategy
(2008 – 2011)

GI-council strategic
Geonovum tactical
RGI/Geoland R&D
eGov programs
operational
Netherlands (3)
Dutch cadastre key access role authentic registers

- Gideon Program: Geonovum and GI Council
  - Standardization and technological aspects Authentic Registrations]
  - Implementation INSPIRE Directive
  - Encouraging use of geo information in policy and implementation chains
    - Safety
    - Sustainable living environment
    - Mobility area development
Points of Attention: Transposition INSPIRE Directive in EU Member State Legislation

• Successful SDI implementation related to strong strategic position of Land Administration Agencies/ Play active role in INSPIRE Process.

• Half of the EU member states have transposed INSPIRE Directive in National Legislation.

• Most of the problems during transposition relate to:
  • Institutional issues and coordination
  • Composition of platforms
  • Variety of approaches legal, pricing, geospatial data policy issues

• Large differences between the EU member states’ SDI’s.

• Overall monitoring system needed.
Points of Attention: Trend Transposition National EU Responsibilities to Pan European Legislation

- More visibility needed on SDI infrastructure legislation (such as INSPIRE) in policy documents.

- Research creation synergies geo spatial communities and policy programs EU.

- Europe 2020 Strategic Document EU 2020
  - Strategy document European Commission such as GMES
  - 7th Framework Program
  - European Commission ICT Work program 2011-2013 “Internet in the future”
  - Digital Agenda Program
  - 18th Ministerial Declaration on E-Government (Malmo Declaration)
General Points for Consideration

• Optimise use of high quality data by user communities.
• Convergences / Technological developments.
• Growing importance of legal and data policy issues.