Supporting European SDI with ArcGIS for INSPIRE

Roberto Lucchi
INSPIRE

- INSPIRE is the legal framework for a European Spatial Data Infrastructure for the Environment
  - Data must be published according to INSPIRE Implementing Rules
  - Member States are responsible for implementation

- Implementing Rules
  - Data (organized into three Annexes)
  - Metadata
  - Network Services
  - Discovery, Access, Sharing
  - Monitoring/Reporting
### The Annexes

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INSPIRE Results in a European Geospatial Platform

- Environmental
- Climate change
- Conservation
- Health
- Safety
- Transportation
- Urban planning
...and many more

Government Mission Owners
Data Infrastructure Developers
Research Community
General Public
Application Developers
Data Infrastructure Innovators
GIS Services
Why INSPIRE is Important

• Promotes European collaboration and cooperation
  - Among countries
  - Between different governmental levels
  - In different thematic areas
  - Also for private organizations and independent research

• Improve response time through interoperability
  - Streamline decision making processes
  - Reacting to environmental emergency situations

• Reduce Costs
  - Create once, use multiple

• Establishes European Geospatial Platform
Who Needs to Implement INSPIRE

• Legally Mandated Organizations
  - European Commission
    - Establish Community Level Geoportal
    - Establish Implementing Rules
  - Member States
    - Ensure compliance with Implementing Rules
  - Public Authorities
    - Meet Member State and EC Mandates for INSPIRE
ArcGIS for INSPIRE
ArcGIS for INSPIRE

Extends ArcGIS with Discovery, View and Download Services, Metadata, Data Models

- Web Services
- Data Models
- Integrated Tools
- Desktop and Server Extensions
ArcGIS for INSPIRE Connects Producers and Users

INSPIRE Geoportal

Web GIS

Desktop GIS

Mobile GIS

View Services

Download Services

Discovery Services

Monitoring Services

Legally Mandated Organizations

EU bodies

- ESA
- Eurostat
- EEA
- ...
ArcGIS for INSPIRE: What’s Included

- INSPIRE Web Portal
- Web Map Viewer
- Geodatabase
- Templates
- Metadata Catalog
- Geoportal Server for Discovery Service
- ArcGIS Desktop Extension for data management and authoring services
- ArcGIS Server Extension for View and Download Service
- Metadata Catalog
Meet INSPIRE Compliance in a Timely Manner

- Annex I data
- Download & Transf.
- Discovery View
- Metadata
- EU Geoportal
- M&R

2010

2011

Now

1.0
Meet INSPIRE Compliance in a Timely Manner

INSPIRE Roadmap
# INSPIRE Compliance

<table>
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<th>INSPIRE Implementing Rule</th>
<th>Implemented in ArcGIS for INSPIRE 1.0</th>
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<td>Regulation on INSPIRE Network Services - INSPIRE <strong>View Service</strong></td>
<td>Technical Guidance for the implementation of INSPIRE View Services 2.12 (with Service Pack 3.0)</td>
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<td>Technical Guidelines based on EN ISO 19115 and EN ISO 19119 (Version 1.2)</td>
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<tr>
<td>Regulation on interoperability of <strong>spatial data sets</strong> and services</td>
<td>Technical Guidance on Annex I data themes (Administrative Units, Cadastral Parcels, Geographical Names, Hydrography, Protected Sites, Transport Networks, Addresses, Coordinate Reference Systems, Geographical Grid Systems) 3.0.1</td>
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Implementing an INSPIRE Node
What is so challenging about INSPIRE

• INSPIRE is Demanding
  - Many Complex Specifications
    - Metadata
    - Data specifications
    - Web services
  - Long term commitment
  - Strict Conformance Requirements
  - Strict Quality of Service Requirements

• INSPIRE is
  - Driving geospatially enabling the information society
  - Core pillar of the geospatial information society
  - Prerequisite to add geospatial to eGovernment processes
ArcGIS for INSPIRE is a Complete Solution

- Create INSPIRE compliant datasets using the geodatabase templates for INSPIRE Annex data themes
- Manage INSPIRE Data
- Create and publish INSPIRE Metadata
- Author INSPIRE Services
- Deploy INSPIRE View & Feature Download Services
- Create and federate INSPIRE Discovery Services
- Discover and consume INSPIRE resources
ArcGIS for INSPIRE Implementation Pattern

1. Integration into business processes and transformation of data to INSPIRE

2. Data repository for spatial data sets optimized for INSPIRE data specifications

3. Delivery via INSPIRE network services
Transform Existing Data into INSPIRE Datasets

Example based on Data Interoperability Extension
Create INSPIRE Maps and Services

1. “Add INSPIRE Layers” desktop tool: allows loading INSPIRE specific data themes and feature types
2. Create INSPIRE View, Feature and Predefined Feature Download services using ArcCatalog
Demo: Authoring INSPIRE Services

Roberto Lucchi
Create and Publish Metadata

1. Create INSPIRE metadata by using the desktop editor or the Geoportal Web editor
2. Publish metadata from desktop to Geoportal with publish tool
Discover and Consume INSPIRE Resources
ArcGIS for INSPIRE Enables Data Discovery

1. Multiple Discovery Services. ArcGIS for INSPIRE supports harvesting or federate searches.

2. ArcGIS for INSPIRE includes INSPIRE Discovery Services.
ArcGIS for INSPIRE Connects Producers and Users

1. INSPIRE View & Download Services
2. INSPIRE Geoportal
3. ArcGIS for INSPIRE includes Discovery Service client add-ons and widgets

European SDI

Consumers
Demo: Create and Discover Metadata
For Further Information

- ArcGIS for INSPIRE product website: www.esri.com/inspire
  - Flyer, Product description, White papers
- ArcGIS for INSPIRE Resource center: http://resources.arcgis.com/content/arcgis-inspire/1.0/about
  - Geodatabase templates, Forum, Code gallery
- Email at inspire@esri.com
ArcGIS for INSPIRE

- Compliant Services
- Data Models
- Integrated Tools
- Extending Desktop and Server

ArcGIS for INSPIRE

www.esri.com/inspire