INSPIRE: The ESRI Vision

Tina Hahn, GIS Consultant, ESRI(UK)
Miguel Paredes, GIS Consultant, ESRI(UK)
Overview

- Who are we?
  - Introduction to ESRI Inc. and ESRI(UK)
  - Presenters
- ArcGIS
- The ESRI Solution to INSPIRE
  - Components
  - Standards
  - Quality
- Sample Scenarios
- Summary
Introduction to ESRI Inc and ESRI (UK)

- ESRI is the **world leader** in GIS (geographic information system) modelling and mapping software and technology
- Global company founded in 1969
- 350,000 customers in 150 countries worldwide
- ESRI UK – 300 specialist staff with over 4,300 clients in the UK
- ESRI UK has an extensive track record of delivering enterprise solutions that make businesses more **efficient and effective** through the better use of geographic information
Presenters

**About us**

Tina Hahn  
GIS Consultant, ESRI (UK)  
thahn@esriuk.com

Miguel Paredes  
GIS Consultant, ESRI (UK)  
mparedes@esriuk.com

**Our presentation**

ESRI Solution for INSPIRE:
- Components
- Standards
- Interoperability
- Quality

**Our objectives**

Present to you a brief introduction to the ESRI solution for INSPIRE; what is it made of; how are standards implemented; and why it is an excellent alternative for implementing INSPIRE compliant SDI.
Meeting INSPIRE Requirements

- **Core Capabilities:**
  - Author INSPIRE-compliant geospatial data and metadata
  - Serve INSPIRE-compliant Network Services
    - View Service, Download Service, Discovery Service
  - Use INSPIRE-compliant geospatial services and data

- **Additional Capabilities:**
  - Secure access to geospatial services, content, and applications
  - Create and apply license models for accessing geospatial services
  - Define Quality-of-Service rules for geospatial services and monitor their health
COTS components to build INSPIRE solutions

Components that support Open Standards (OGC, ISO)

- **ArcGIS Desktop**
  - Manage INSPIRE data
  - Manage INSPIRE metadata
    - Includes support for Gemini2 (based on ISO 19115 & INSPIRE compliant)
  - Author INSPIRE web services

- **ArcGIS Server Standard Enterprise**

- **Geoportal extension**
  - INSPIRE Metadata & Discovery Services

- **INSPIRE Fusion Center** for ArcGIS Server
  - INSPIRE Data Models
  - INSPIRE View & Download Services

- **ArcGIS Server Client APIs** as base for a viewer
  - securityManager
  - licenseManager
  - serviceMonitor
ESRI COTS components support open standards (ISO)

- ISO/TC 211 Geographic Information Standards
  - 19106:2004—Profiles
  - 19107:2003—Spatial Schema
  - 19128:2005—Web Map Server Interface
  - 19136:2007—Geography Markup Language
  - 19108:2003—Temporal Schema
  - 19109:2005—Rules for Application Schema
  - 19110:2005—Methodology for Feature Cataloging
  - 19111:2003—Spatial Referencing by Coordinates
  - 19112:2003—Spatial Referencing by Geographic Identifiers
  - 19113:2002—Quality Principles
  - 19114:2003—Quality Evaluation Procedure
  - 19115:2003—Metadata
  - 19118:2005—Encoding
  - 19119:2005—Services
  - 19123:2005—Schema for Coverage Geometry
  - 19125:2004—Simple Feature Access—Parts 1–2
ESRI COTS components support open standards (OGC)

- OGC
  - WMS (1.0.0, 1.1.0, 1.1.1, 1.3.0)
  - WFS (1.0, 1.1)  WFS-T (1.1)
  - WCS (1.0.0, 1.1.0, 1.1.1)
  - CS-W (2.0.1, 2.0.2)
  - SLD (1.0)
  - KML (2.1, 2.2)
  - GML (3.1.1, 3.2.1)
  - GMLsf (1.0.0)
  - SFO (1.1)
  - SFS (1.1, 1.1.0, (NG)1.1, (TF) 1.1, (BG) 1.1)
ESRI solution for INSPIRE (1)

ArcGIS Desktop & Server

- ArcGIS Desktop
  - Manage INSPIRE data
    - Create, visualize, analyze
  - Manage INSPIRE metadata
    - Edit and validate INSPIRE metadata
    - Publish INSPIRE metadata in the Geoportal
  - Author INSPIRE web services
    - Create INSPIRE View and Download services

- ArcGIS Server Standard Enterprise
  - Serving INSPIRE Data
ESRI solution for INSPIRE (2)

**Geoportal extension**

- **INSPIRE Metadata**
  - Create, manage, publish, and store INSPIRE metadata

- **INSPIRE Discovery Services**
  - Provides complete support for the INSPIRE Discovery Services specification (OGC CSW ISO AP and additional required INSPIRE capabilities)

- **Other Geoportal functionalities**
  - Search and view geospatial resources
  - View live map services
  - Download data
  - Distributed catalogs management
    - Directed and federated search
    - Harvesting
  - Search and publish integrated with ArcGIS Desktop, search applications for ArcGIS Explorer, Flex API, …
ESRI solution for INSPIRE (3)

INSPIRE Fusion Center Extension for ArcGIS Server
- Extends the ArcGIS platform with core INSPIRE capabilities

INSPIRE View Service Extension for ArcGIS Server
- Map generation & data source handling following the INSPIRE rules
- Provides complete support for the INSPIRE View Service specification

INSPIRE Download Service Extension for ArcGIS Server
- Complex feature query and access following the INSPIRE rules
- Provides complete support for the INSPIRE Download Service and INSPIRE Data Encoding specification

INSPIRE Annex Data Models as Enterprise Geodatabases
- Ready-to-use INSPIRE Data Models utilizing GDB technology
- Provides complete support for the INSPIRE Annex I Data Model specifications
ESRI solution for INSPIRE (4)

Additional Products

- **Provide Value-Add and Distinguishing Capabilities**
  - Works with Geoportal extension and/or ArcGIS Server/Desktop

- **securityManager**
  - Fine grained access policies and user management
  - Secured access to spatial data services, content and applications supporting INSPIRE Data Sharing

- **licenseManager**
  - Commercial/non-commercial license models with or without restrictions
  - Licensed access to spatial data services, content and applications supporting INSPIRE Data Sharing

- **serviceMonitor**
  - Monitor and report on the “quality” of service of geospatial services
  - Supporting the INSPIRE Quality-of-Service requirements of INSPIRE
Publication of Data in INSPIRE

A Typical Pattern

Data & Service Provider may be the same organisation
Publication of data in INSPIRE

INSPIRE Fusion Centre

Three key tasks required for this solution pattern

1. Integration into business processes and transformation of data to INSPIRE
2. Data repository for spatial data sets optimized for INSPIRE data specifications (reusable component)
3. Access via INSPIRE network services meeting the Quality-of-Service requirements (reusable component)

Internal Information / Storage Systems

INSPIRE Fusion Center – Data Model & Web Services

Consumers

European SDI

Transformation & Integration
Summary

- ESRI has a solution for INSPIRE
- Flexible implementation via a collection of COTS components
- Fits within a wide variety of infrastructures
- Adheres to standards (ISO, OGC)
- Delivers information and data in a secure, interoperable manner

- An excellent alternative for implementing an INSPIRE compliant SDI
Tina Hahn
Consultancy Services
Contact:
Suite ¾, Great Michael House, Edinburgh, EH6 7EZ
+44 131 561 1721
thahn@esriuk.com

Miguel Paredes
Technical Solutions Group
Contact:
Millennium House, Aylesbury, Bucks, HP21 7QG
+44 1296 745 500
mparedes@esriuk.com