



ArcGIS for INSPIRE

Marten Hogeweg

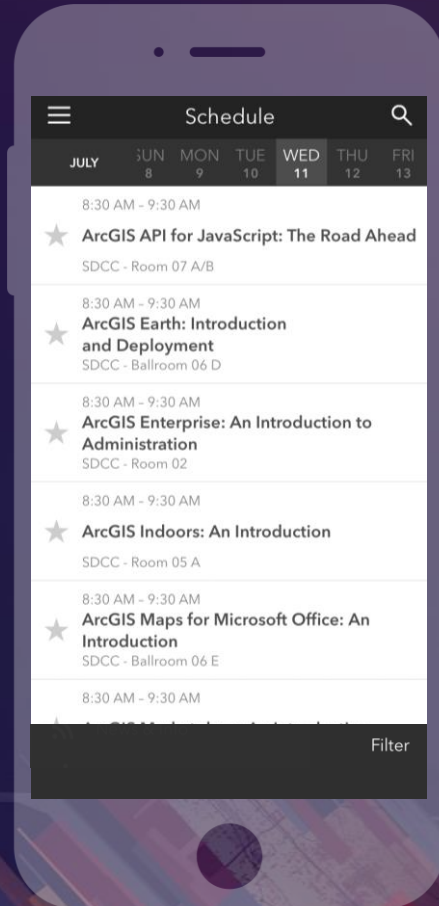
ESRI USER CONFERENCE

Please Take Our Survey on the App

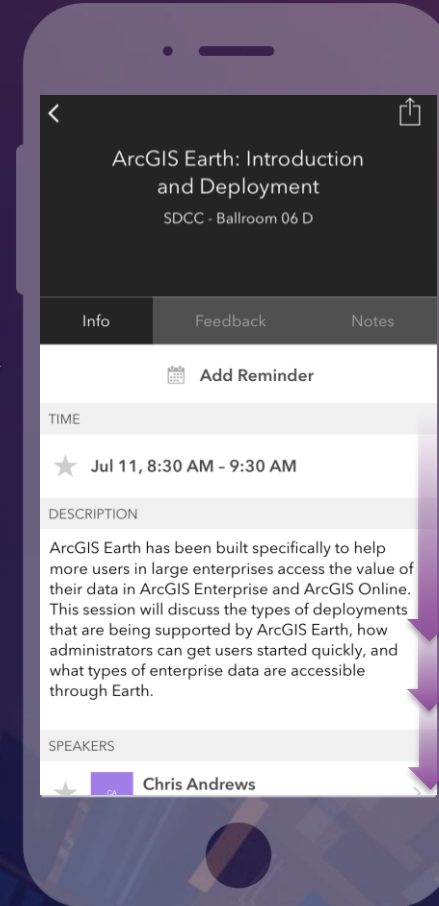
Download the Esri Events app and find your event



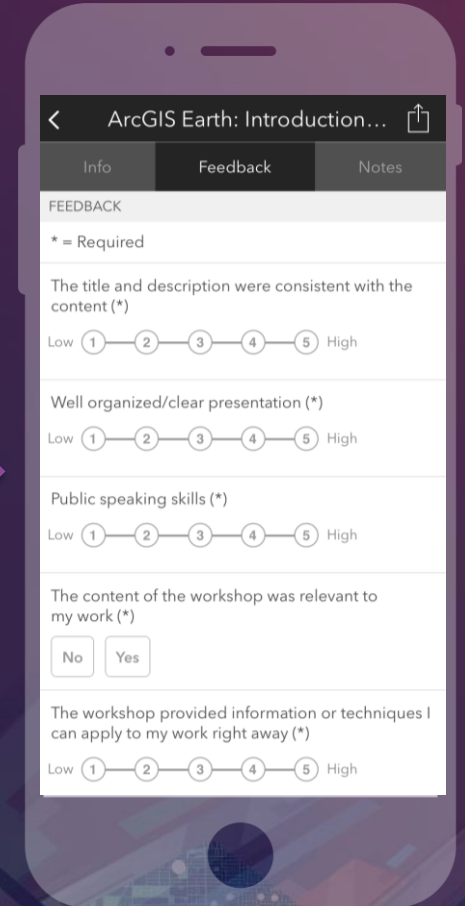
Select the session you attended



Scroll down to find the feedback section



Complete answers and select "Submit"



Primer on INSPIRE

The background features a dark blue gradient with a faint grid pattern. In the bottom corners, there are abstract, colorful geometric shapes in shades of red, orange, yellow, and blue, resembling stylized buildings or data structures. The overall aesthetic is modern and technical.

What is INSPIRE?

- **INSPIRE is the legal framework for a European Spatial Data Infrastructure for the Environment**
 - Data owners must publish their data
 - Member state are responsible to organize
- **INSPIRE covers**
 - Data, Metadata, Discovery, Access, Sharing, and Monitoring/Reporting
 - A variety of Data themes

INSPIRE Addresses Pan-European Issues

Using Standardized Data Models, Services, and Metadata

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



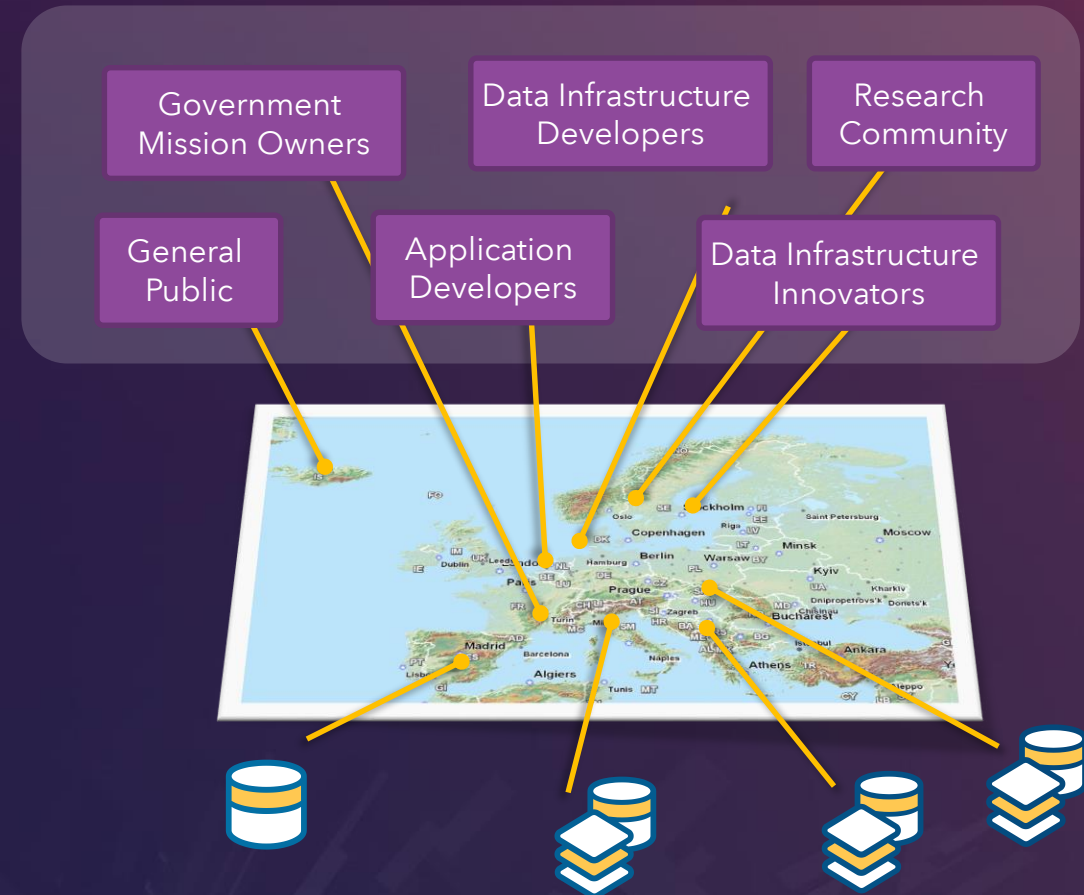
Why is INSPIRE Important?

- **Sharing geospatial data harmonized across Europe**
 - Between countries
 - On different governmental levels
 - On different thematic areas
 - Also for private and research
- **Get right data in the right time in an interoperable way to**
 - Streamline decision making processes
 - Reacting to environmental emergency situations
- **Economic benefits of sharing data**
 - Create once, use multiple
- **Collaboration and mash-up**

INSPIRE Results in a European Geospatial Platform

Supporting a Large Community of Users & Applications

- **Providing:**
- **Authoritative Data**
- **Geospatial Services**
- **Content Catalogs**
- **API for Developers**
- **Core Geospatial Applications**



*Integrating All Levels of Government . . .
Supporting Open Access, Collaboration, Harmonization . . .*

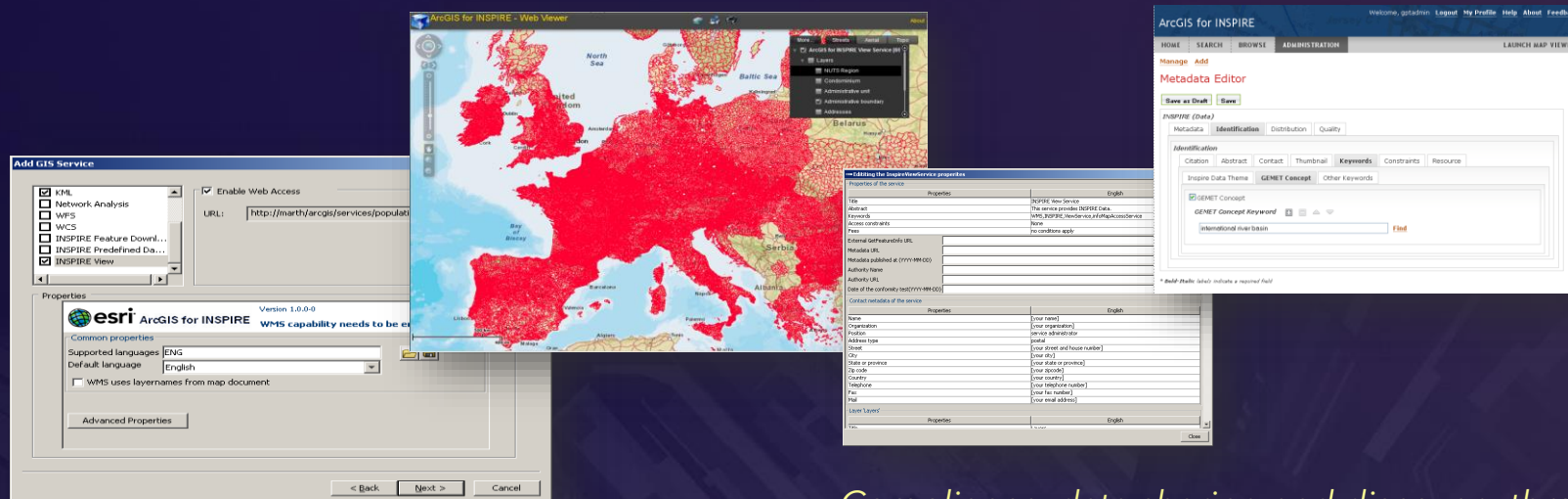
ArcGIS for INSPIRE

The background features a dark blue gradient with a faint grid pattern. On the left and right sides, there are abstract, colorful geometric shapes in shades of red, orange, yellow, and blue, resembling stylized buildings or data structures. The overall aesthetic is modern and technical.

ArcGIS for INSPIRE

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

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



Compliance, data sharing and discovery throughout Europe using ArcGIS for INSPIRE

ArcGIS for INSPIRE Capabilities

Requirements	Implementation option	ArcGIS for INSPIRE
Metadata	Based on ISO 19115/19119/19139	X
Discovery service	Based on OGC CSW 2.0.2 ISO AP (+ multilingual metadata, additional indexed metadata attributes, ...)	X
Data models	Based on GML application schemas	X
View service	Based on OGC WMS or WMTS (+ multilingual metadata, ...)	X
Download service	Based on OGC WFS 2 and INSPIRE GML application schemas	X
	Based on ATOM/OpenSearch	X
Service Level Agreement	High availability, response time, minimum capacity	X

ArcGIS for INSPIRE Components

- **Desktop extension for ArcMap and ArcCatalog**
 - Author Map documents with prescribed cartography
 - Author INSPIRE web services
- **Server extension**
 - Enable INSPIRE View and Download Service capabilities in ArcGIS GIS Server
- **Geodatabase templates**
 - Provides a target geodatabase for INSPIRE data harmonization
- **Geoportal Server**
 - Metadata Editor
 - Metadata Catalog with INSPIRE Discovery Service

ArcGIS for INSPIRE Manages INSPIRE Data

Manage INSPIRE Data in ArcGIS Desktop

The screenshot shows the ArcGIS Desktop interface. The main window is titled 'ArcCatalog - ArcEditor - Database Connections\balaton ifc user.sde\IFC.statNUTSRegionS'. The 'Catalog Tree' on the left lists various data layers, with 'IFC.statNUTSRegionS' selected. An 'Identify Results' dialog box is open, showing the following information:

Layers: statNUTSRegionS

Location: (10.039814 53.580721)

Field	Value
Unique identifier	2290
IFC identifier, used in references to the object/feature	50
inspireId_localId	NUTS_03M
inspireId_namespace	_G 2010 2010
inspireId_versionId	1
inspireId_versionId_void	<null>
NUTSCODE	DE6
BEGINLIFESPANVERSION	28.05.2010 11:59:51
BEGINLIFESPANVERSION_VOID	<null>
ENDLIFESPANVERSION	<null>
ENDLIFESPANVERSION_VOID	1
SHAPE	Polygon
SHAPE.AREA	0,100979
SHAPE.LEN	2,525814

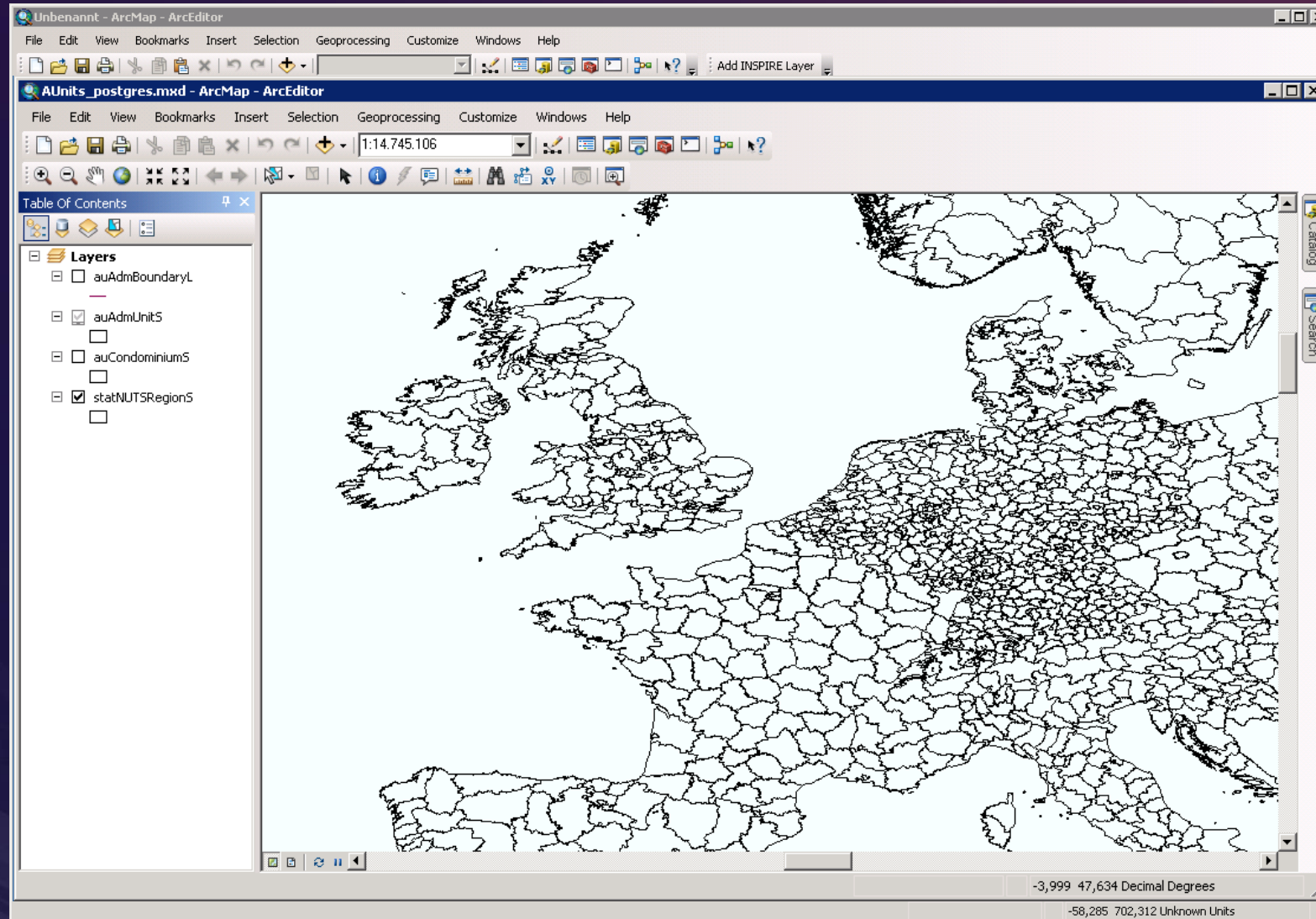
The map in the background shows a yellow-shaded region in Europe, with the text '© EuroGeographics for the administrative boundaries' visible at the bottom right. The 'Preview' dropdown at the bottom is set to 'Geography'. The status bar at the bottom right shows the version number '6.2459 54.2145'.

ArcGIS for INSPIRE Geodatabase Templates at 10.6.1

Annex I	Annex II	Annex III
Coordinate Reference System Geographical Grid System Geographical Names Administrative Units Addresses Cadastral Parcels Transport Networks Hydrography Protected Sites	Land Cover Geology Elevation Orthoimagery	Statistical Units Land Use Mineral Resources Buildings Soil Human Health and Safety Utility and Governmental Services Environmental Monitoring Facilities Production and Industrial Facilities Agricultural and Aquacultural Facilities (design) Population Distribution - Demography Area Managements/Restriction/Regulation Zones and Reporting Units Natural Risk Zones Atmospheric Conditions, Meteorological Geographical Features Oceanographic Geographical Features Sea Regions Bio-geographical Regions Habitats and Biotopes Species Distribution Energy Resources

ArcGIS for INSPIRE Supports Authoring Services

Additional Tools for ArcMap



ArcGIS for INSPIRE Manages INSPIRE Services

Manage INSPIRE Services in ArcCatalog

The screenshot displays the ArcCatalog interface with several windows open. The 'Add GIS Service' dialog is in the foreground, showing the 'INSPIRE View' service selected. The 'Editing the InspireViewService properties' dialog is also open, showing the 'Properties of the service' and 'Contact metadata of the service' sections. The background shows a map of Europe with labels for Suomi / Finland, Russia, Ukraina, Georgia, and Turkiye. The status bar at the bottom right of the map window shows the coordinates 32.9789 23.4249.

Add GIS Service Dialog:

- KML
- Network Analysis
- WFS
- WCS
- INSPIRE Feature Downl...
- INSPIRE Predefined Da...
- INSPIRE View

Editing the InspireViewService properties Dialog:

Properties of the service

Properties	English
Title	INSPIRE View Service
Abstract	This service provides INSPIRE Data.
Keywords	WMS,INSPIRE,ViewService,infoMapAccessService
Access constraints	None
Fees	no conditions apply
External GetFeatureInfo URL	
Metadata URL	
Metadata published at (YYYY-MM-DD)	
Authority Name	
Authority URL	
Date of the conformity test(YYYY-MM-DD)	

Contact metadata of the service

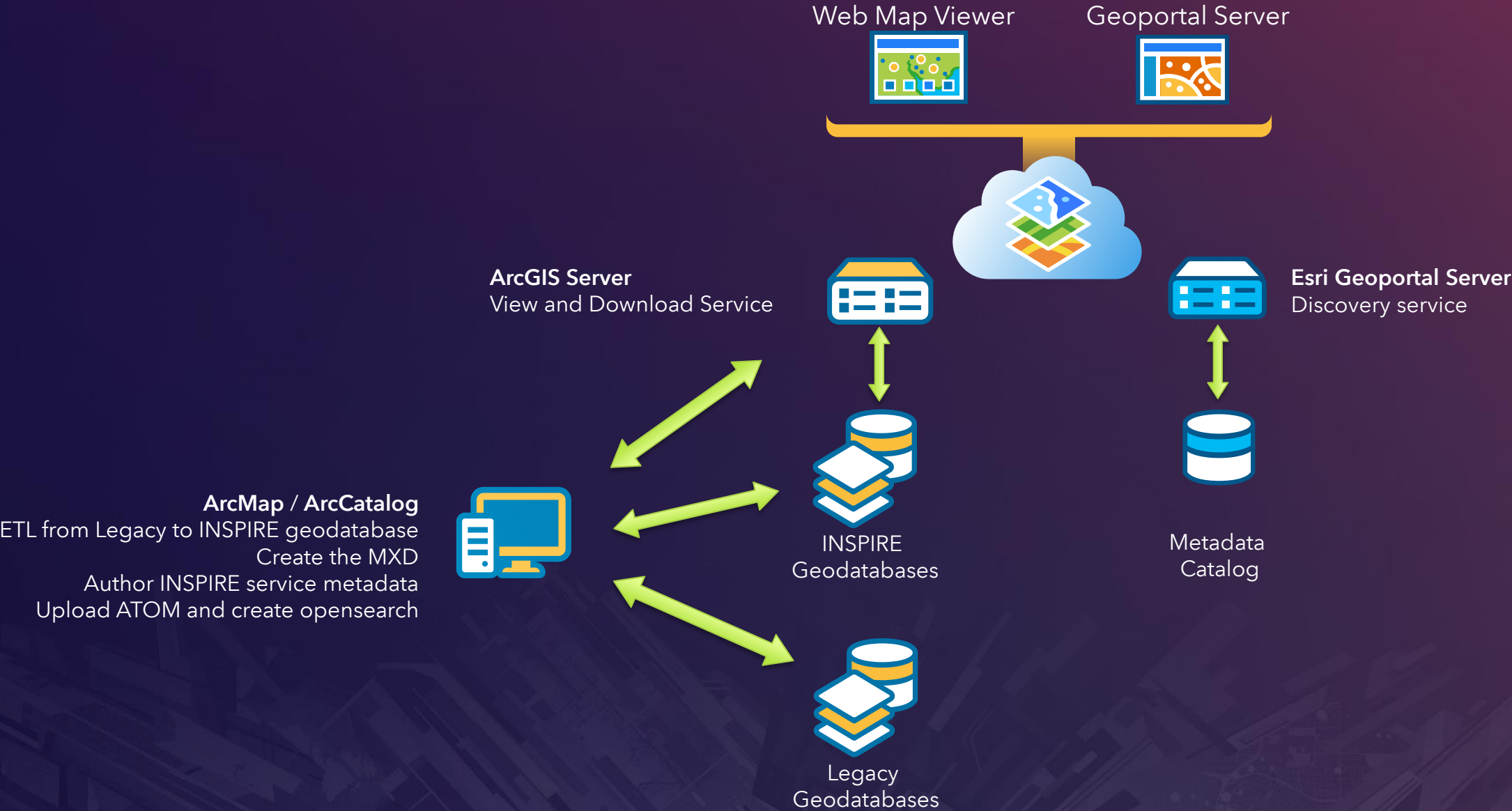
Properties	English
Name	[your name]
Organization	[your organization]
Position	service administrator
Address type	postal
Street	[your street and house number]
City	[your city]
State or province	[your state or province]
Zip code	[your zipcode]
Country	[your country]
Telephone	[your telephone number]
Fax	[your fax number]
Mail	[your email address]

Map Window:

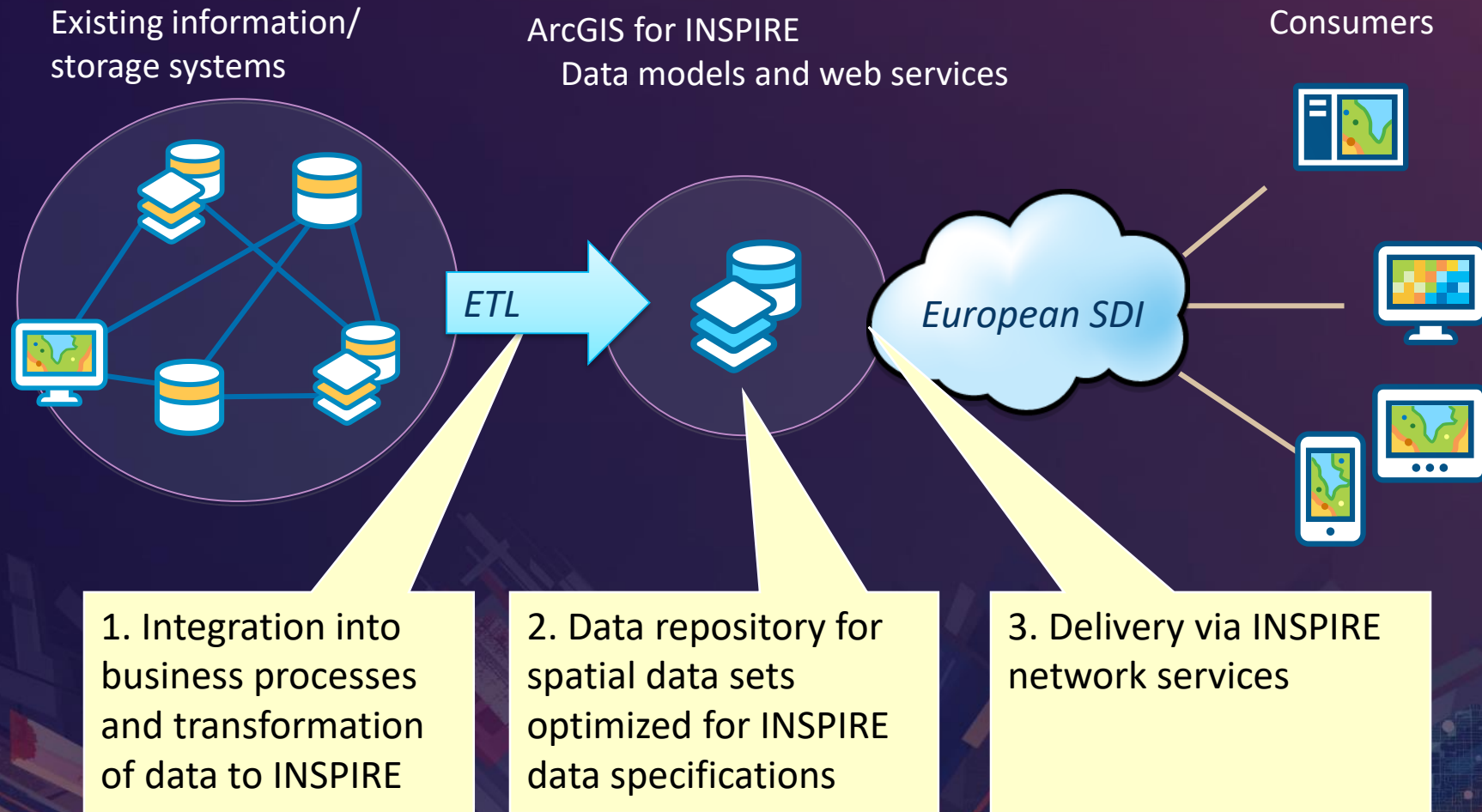
Map showing Europe with labels: Suomi / Finland, Russia, Ukraina, Georgia, Turkiye, Ellada.

Status bar: 32.9789 23.4249

ArcGIS for INSPIRE components



ArcGIS for INSPIRE implementation pattern



The image displays two overlapping screenshots of web portals. The background screenshot is the LNEG (Laboratório Nacional de Energia e Geologia) portal, featuring a search bar with the text 'INSPIRE' and a list of search results including 'Base de Dados dos Recursos Hidro-INSPIRE' and 'Carta Geológica de Portugal à escala INSPIRE'. The foreground screenshot is the 'Eesti geoportaal' (Estonian Land Board Geoportal), showing a search interface with a search bar, a list of search results such as 'Eesti põhikaart 1:10000' and 'Eesti maakatastri kihtandisid põhijustavate objektide infosüsteem', and a map of Estonia with a red bounding box around the country.

Examples

Roadmap

Creating New Opportunities



What have we learned?

Perhaps it's time to focus on use

INSPIRE implementation is complete

GOAL

2021

"Data that had been locked away for many years has finally found its way to other public administrations, businesses and citizens"

[INSPIRE Boosts Spatial Data Sharing](#)
GIM International interviews Joeri Robbrecht

July 2017

What if... What is success?

Esri contribution to "INSPIRE - What if" workshops

Feb 2017

INSPIRE objectives of making spatial data and services more easily shared and used are still pertinent.

Mid-term evaluation report on INSPIRE implementation

INSPIRE at a crossroads?

INSPIRE Conference

2014

2013

The INSPIRE Directive comes into force

2007

Open data disruption

- Bottom up, user-driven evolution
- Decouples data and exploitation plans
- Supports all users
- Citizen engagement
- Government initiatives management
- Copernicus satellite imaging constellation program sets a precedent for open data in Europe

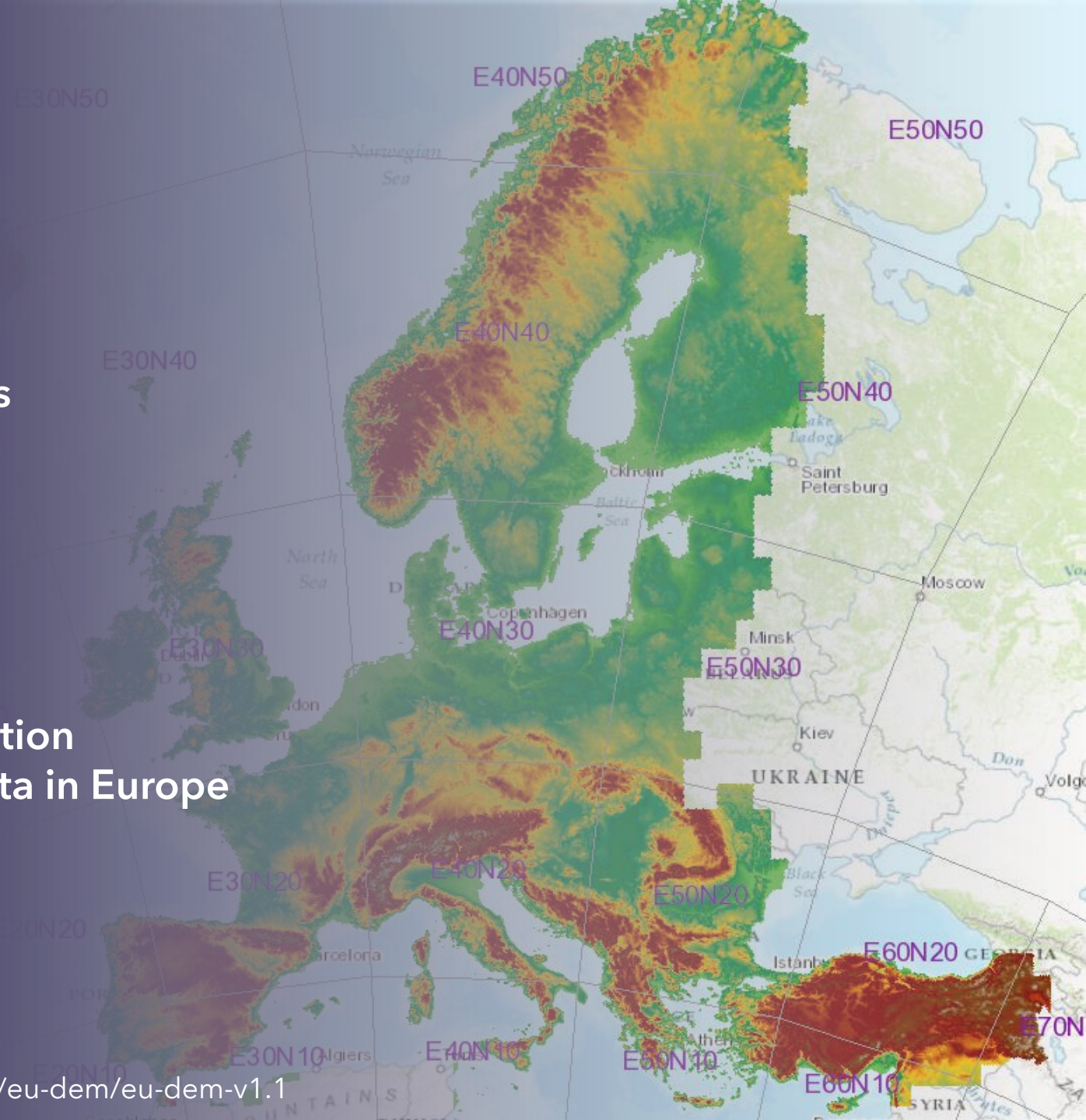


Image data source: (EEA) Copernicus reference data:

<http://land.copernicus.eu/pan-european/satellite-derived-products/eu-dem/eu-dem-v1.1>

ArcGIS Online and ArcGIS Hub

Organizing and Leveraging Community Interactions

- Policy Initiatives
- Community Identities
- Dashboard Monitoring
- Demographic Content



ArcGIS Hub

Citizen Communications

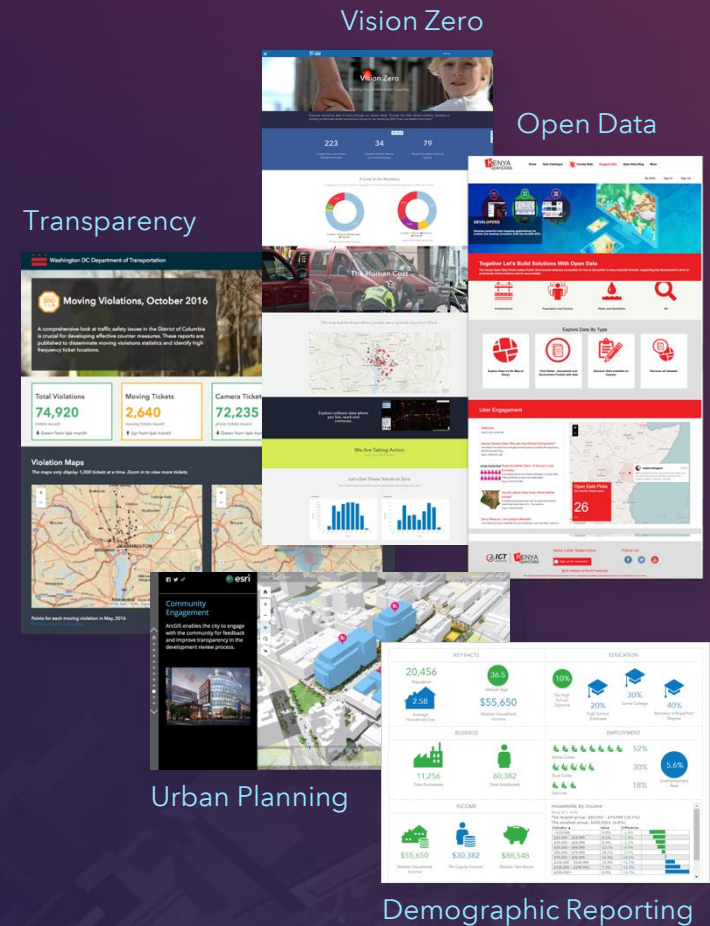
Open Data

Status Reporting

Citizen Surveys (Crowdsourcing)

Storytelling

Community



Vision Zero

Open Data

Transparency

Urban Planning

Demographic Reporting

The collage features several dashboard screenshots: 'Vision Zero' with a child's face and statistics (223, 34, 79); 'Open Data' with a map and data points; 'Transparency' with a 'Moving Violations, October 2016' report showing 74,920 total violations, 2,640 moving tickets, and 72,235 camera tickets; 'Urban Planning' with a 3D city model and a 'Community Engagement' report; and 'Demographic Reporting' with a grid of charts for metrics like 'REVENUE' (\$55,600), 'EMPLOYMENT' (52%), and 'EDUCATION' (30%).

INSPIRE Online

Component	Implementation option	ArcGIS for INSPIRE	INSPIRE Online
Metadata	ISO 19115/19119/19139	√	√
Discovery service	OGC CSW	√	Work To Do
Data models	Data models gdb implementation	√	√
View service	Based on WMS (SLDs, projections, ...)	√	-
View service	View service based on WMTS	√	Work To Do
View/Download service (optional)	Multilingual service metadata and capabilities	√	-
Download service	Based on WFS 2 and INSPIRE GML schemas	√	Work To Do
Download service	Based on ATOM/OpenSearch	√	√
High availability		√	√

<http://inspireonline-esri-de.opendata.arcgis.com/>

See Us Here

WORKSHOP	LOCATION	TIME FRAME
<ul style="list-style-type: none">• ArcGIS for INSPIRE• ArcGIS for INSPIRE• Geoportal server• Geoportal Server• Metadata• Metadata• Metadata• Metadata• Metadata• OGC Services• Interoperability	<ul style="list-style-type: none">• Spotlight• Demo Theater• Technical Workshop• Spotlight Theater• Spotlight Theater• Special Interest Group• Spotlight Theater• Technical Workshop• Technical Workshop• Spotlight Theater• Technical Workshop	<ul style="list-style-type: none">• Tuesday 10:00AM• Tuesday 11:15AM• Tuesday 2:30PM• Wednesday 10:30AM• Wednesday 11:15AM• Wednesday 5:30PM• Thursday 10:30AM• Thursday 1:00PM• Thursday 2:30PM• Wednesday 12:15PM• Wednesday 1:00PM



esri

THE
SCIENCE
OF
WHERE