Discovery and Access of Geospatial Resources using the Geoportal Extension

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Geoportal Extension Product Manager

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DISCOVERY AND ACCESS USING THE GEOPORTAL EXTENSION

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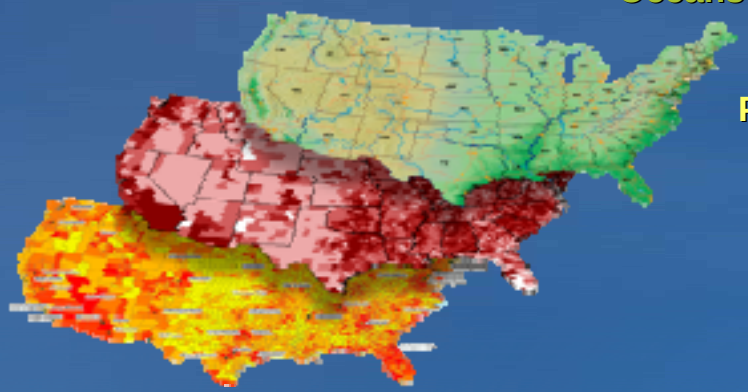
Geospatial Data Is Very Valuable to Government
Used in Many Integrated Applications

Conservation
Science/Modeling
Land Management
Natural Resources
Congestion
Crime
Defense/Security
Pollution
Water
Agriculture/Forestry
Business Efficiency
Emergency Management
Economic Recovery
Energy
Biodiversity
Global Warming
Human Health
Oceans
Land Use
Population
Education
Logistics
Energy
Public Safety
Development
Facility Management
Urbanization
Humanitarian Relief
National Security
Environmental Protection
Law Enforcement



Improving Planning, Management, and Decision Making . . .

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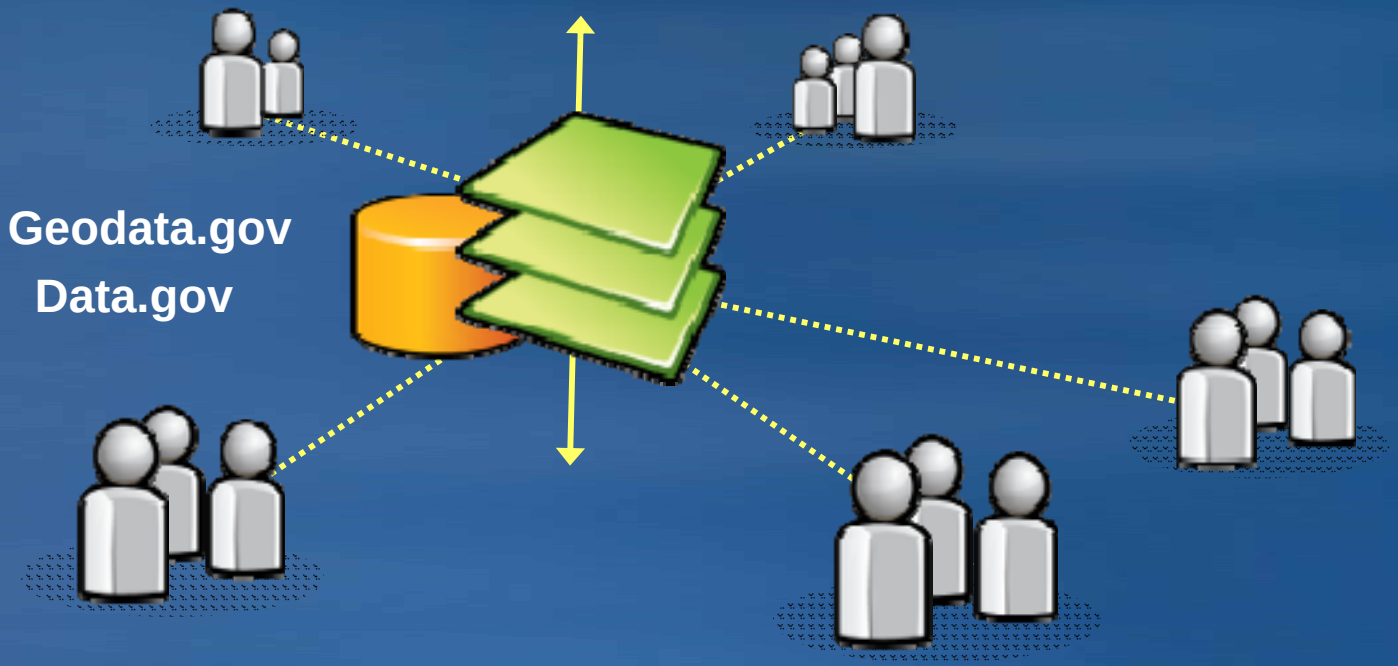
Data Sharing Has Been a Key to This Success

Many Agencies Consider Sharing Part Of Mission



Open Government Directive Provides New Drive For Data Sharing

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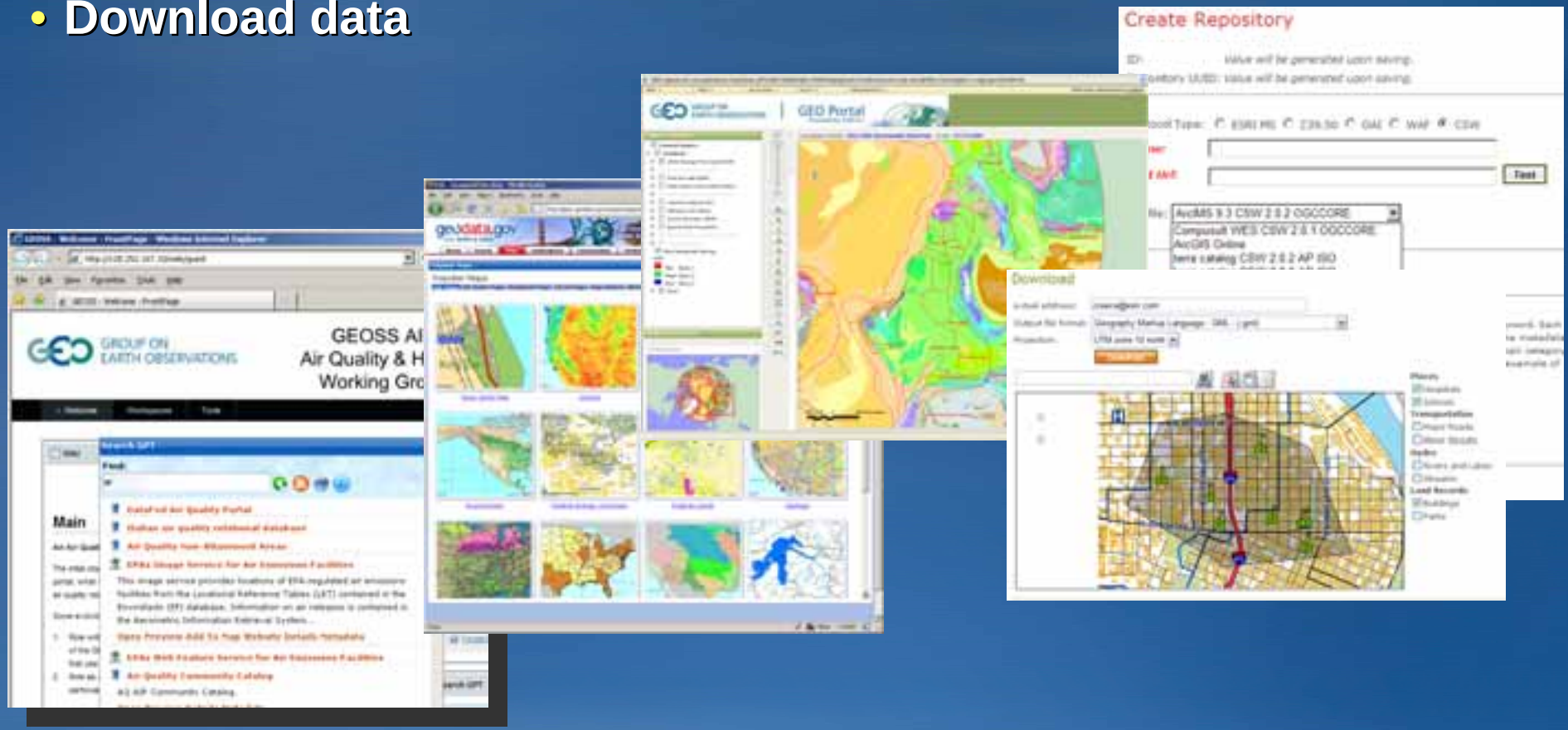
ArcGIS Server Geoportal Extension

Enabling discovery and use of geospatial resources

- Search and view geospatial resources
- Manage, publish, and store metadata
- View live map services
- Download data



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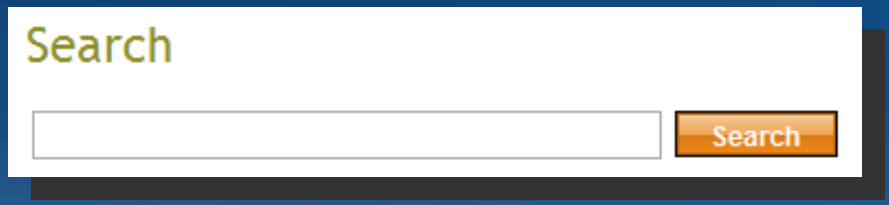
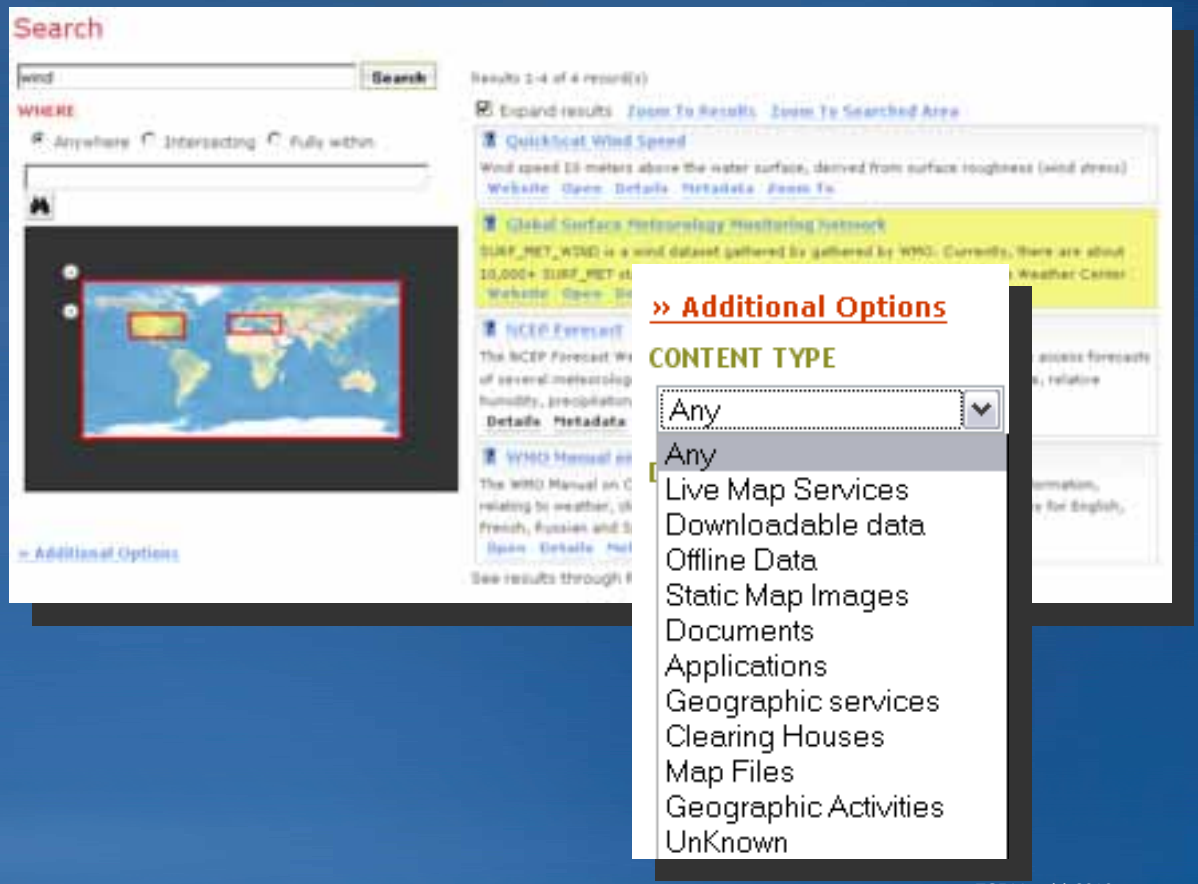
Use Case: *"I want to find data …"*

Solution:

- **Simple keyword Search**
- **Spatial search**
- **Advanced options for experts**
- **Smart matching and ranking**
- **Thesaurus Service**
- **Search results must be simple to understand…*yet contain detail for power users***





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Use Case: *"I want to make a map …"*

Solution:

- **Preview services:**
  - ArcGIS Server Map Services
  - ArcIMS Image Services
  - OGC WMS
  - GeoRSS
  - KML
- **Provide integration points for map viewer platforms**
  - JavaScript, Flex, Silverlight
  - Java ADF viewer as starting point for domain applications
  - ArcGIS Desktop ArcMap
  - ArcGIS Explorer

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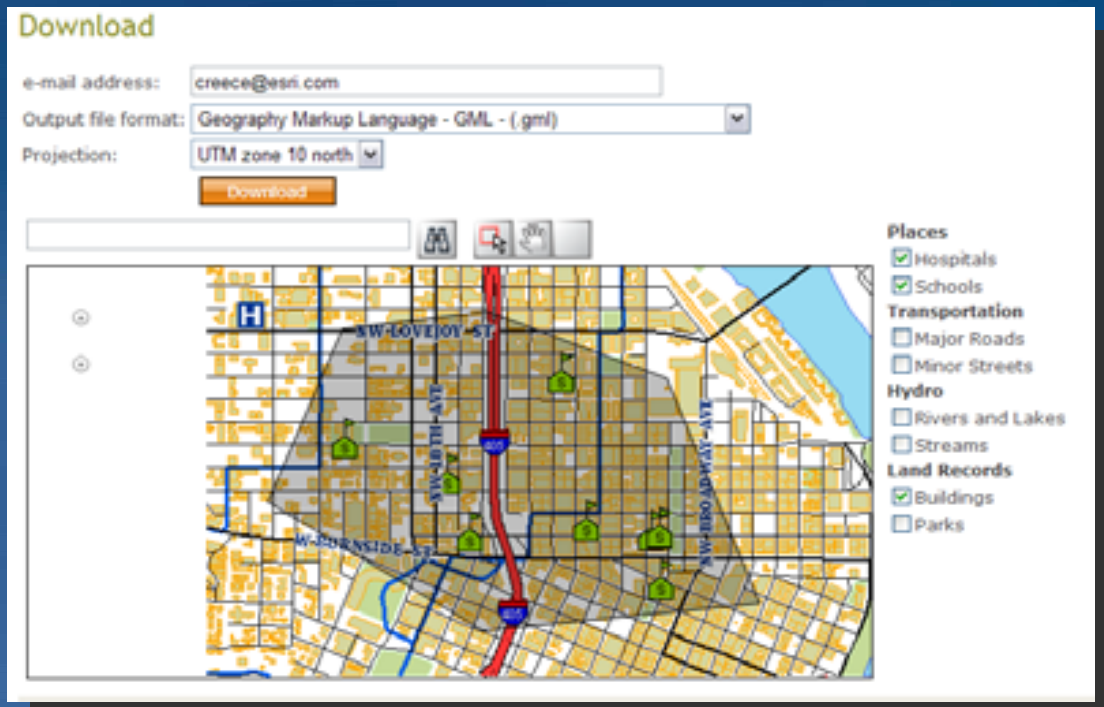
Use Case: *"I want to download data …"*

Solution:

- **Provide page with simple choices for:**
  - **Selecting area**
  - **Selecting data**
  - **Setting options**
  - **Deliver download link through email**
  - **Vector data only**
- **Based on Geoprocessing Service**
- **Extensible in Python**



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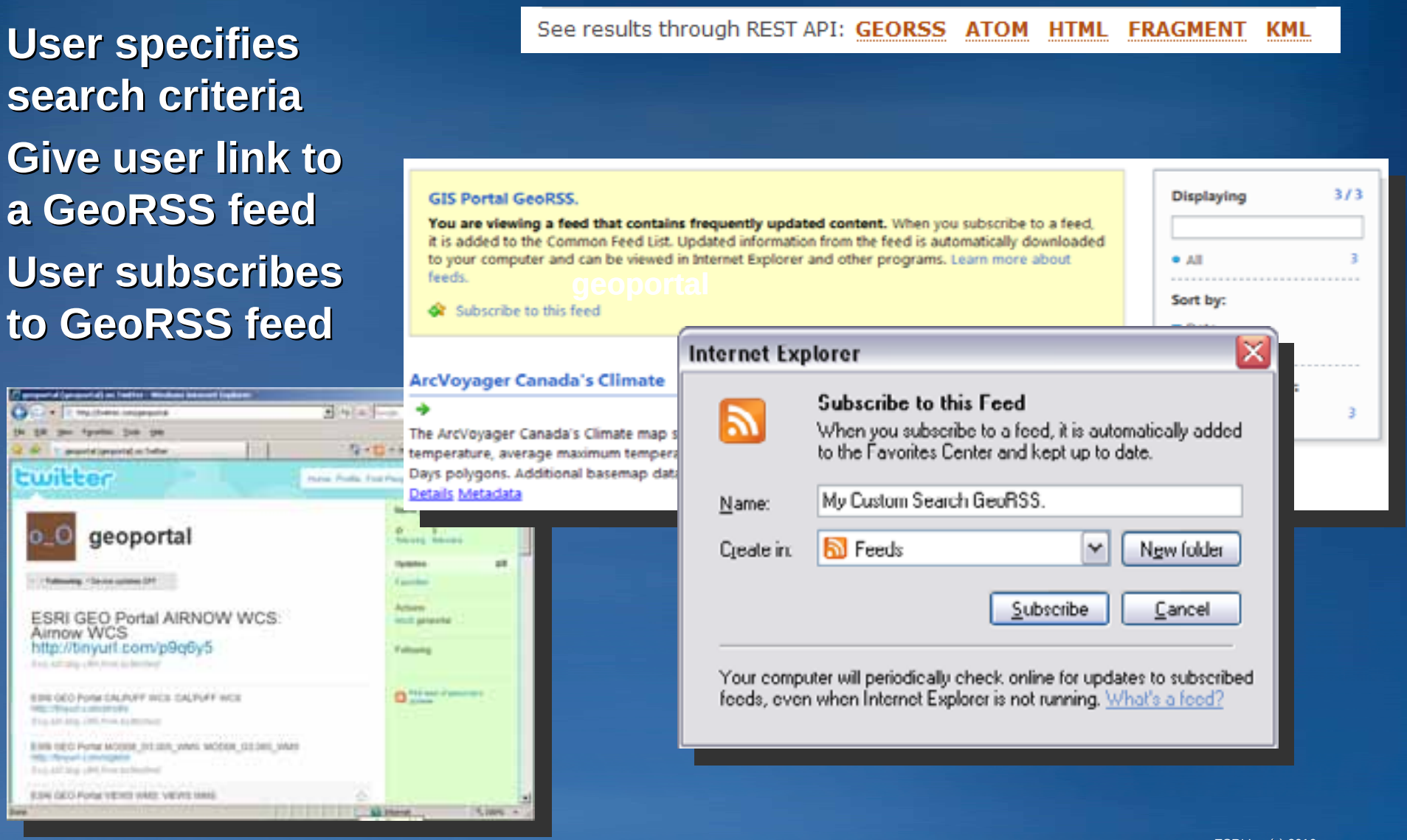
Use Case: *"I want to know when new data is available …"*

Solution:

- **User specifies search criteria**
- **Give user link to a GeoRSS feed**
- **User subscribes to GeoRSS feed**



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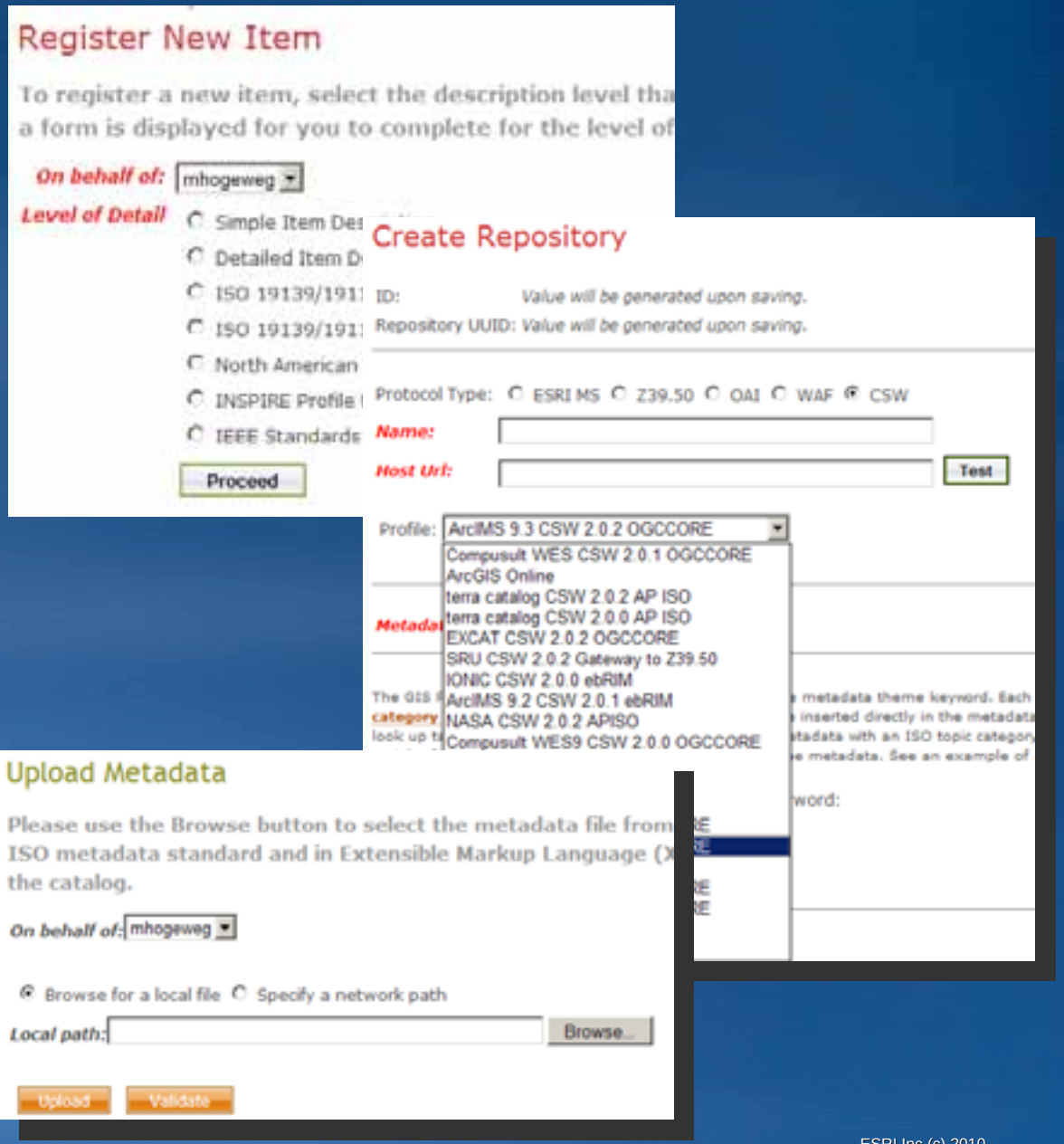
Use Case: *"I want to share my resource…"*

Solution:

- **Give user choices for sharing metadata:**
  - **Register Servers or Services Directly**
  - **Create metadata online**
  - **Upload metadata**
  - **Register SDI catalog site for harvesting**
- **Support metadata standards:**
  - **INSPIRE**
  - **North American Profile**
  - **Dublin Core**



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DEMO

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CLEARINGHOUSES ALONE ARE NOT ENOUGH

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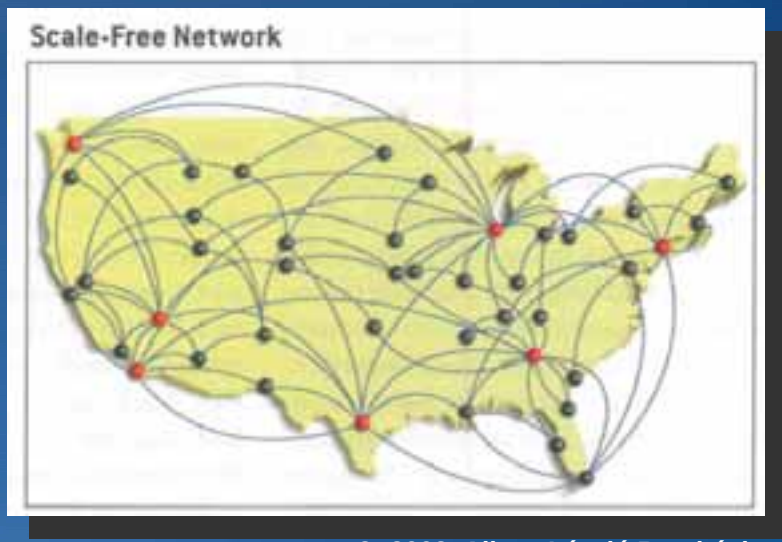
Data Sharing is a Social Activity

- Groups of people with a common interest or goal
- Relationships help achieve goals
- Invariant to application domain:
  - Enterprise, State, Country, Global, Community, …
  - Emergency Response, Natural Resources Management, Climate Change, …



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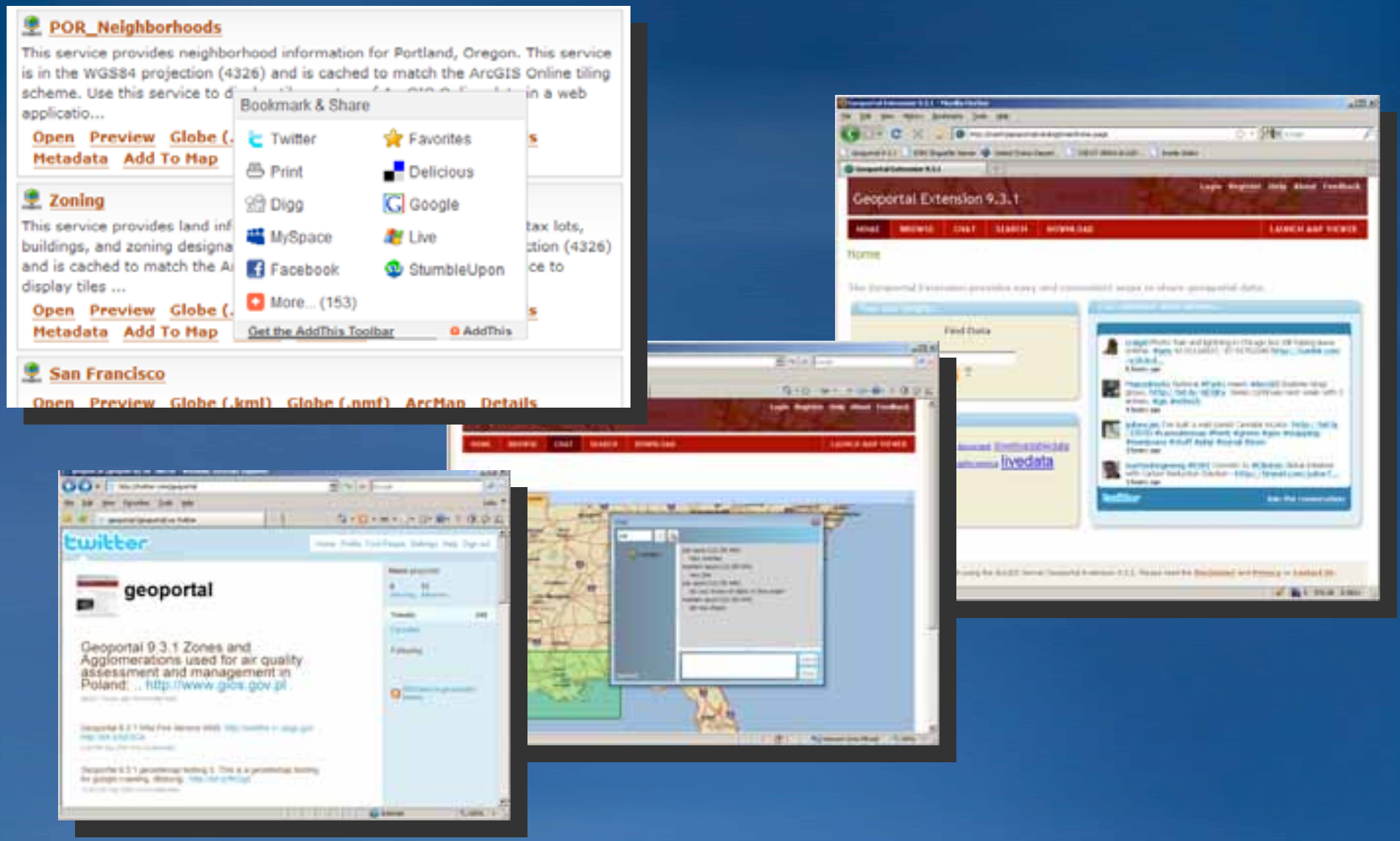
Use Case: *"Help! I need somebody…"*



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Use Case: *"I want to ensure my resource is available…"*

Solution:

- **Monitor Services**
- **Verify Implementation**

- **Performance and Scalability:**

  http://resources.esri.com/enterprisegis/index.cfm?fa=performance.main

- **FGDC Service Status Checker:**

  http://registry.fgdc.gov/statuschecker/

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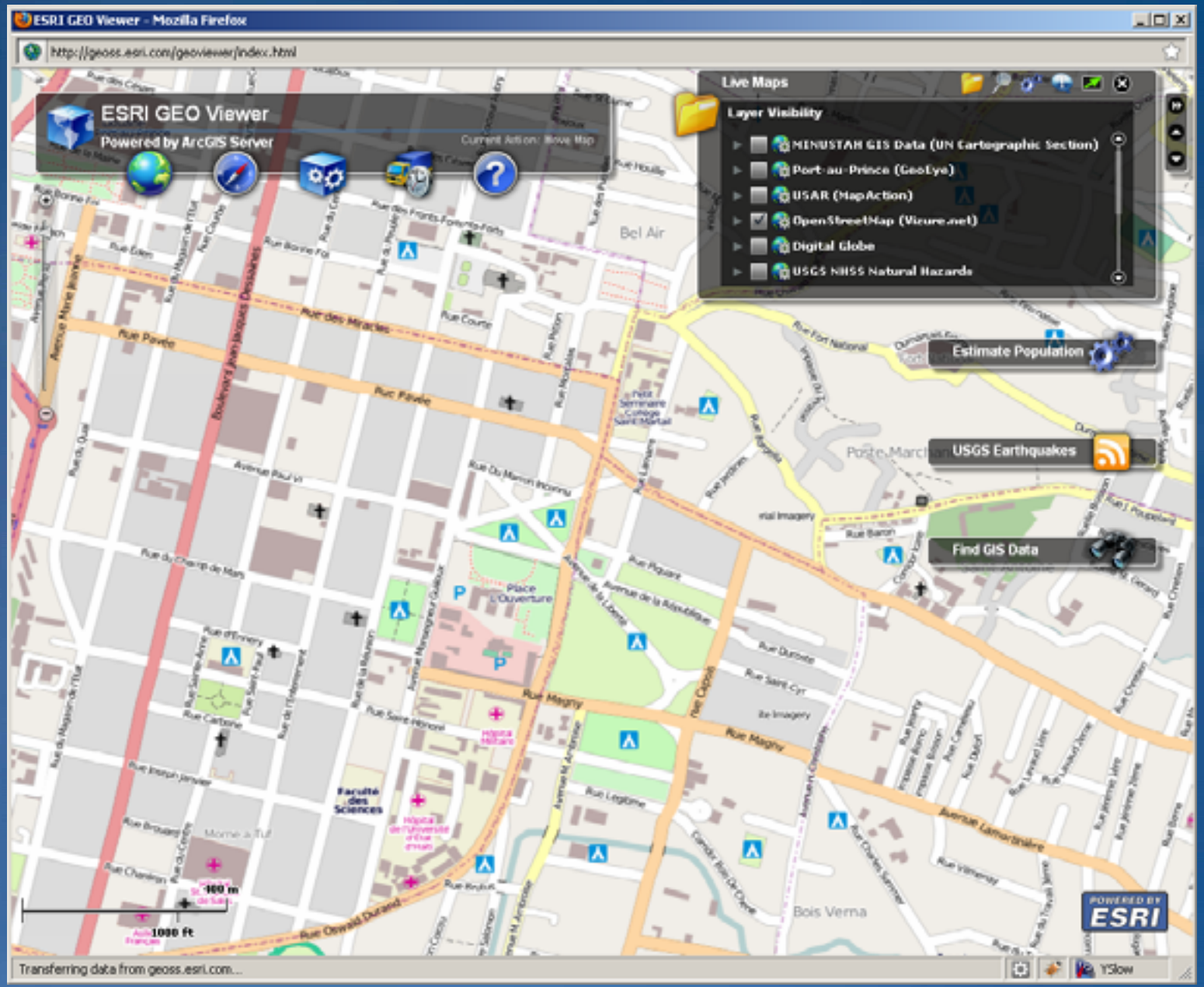
Example: GEO Viewer – Haiti Support

OpenStreetMap integration



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FROM PLUMBING TO PLATFORM

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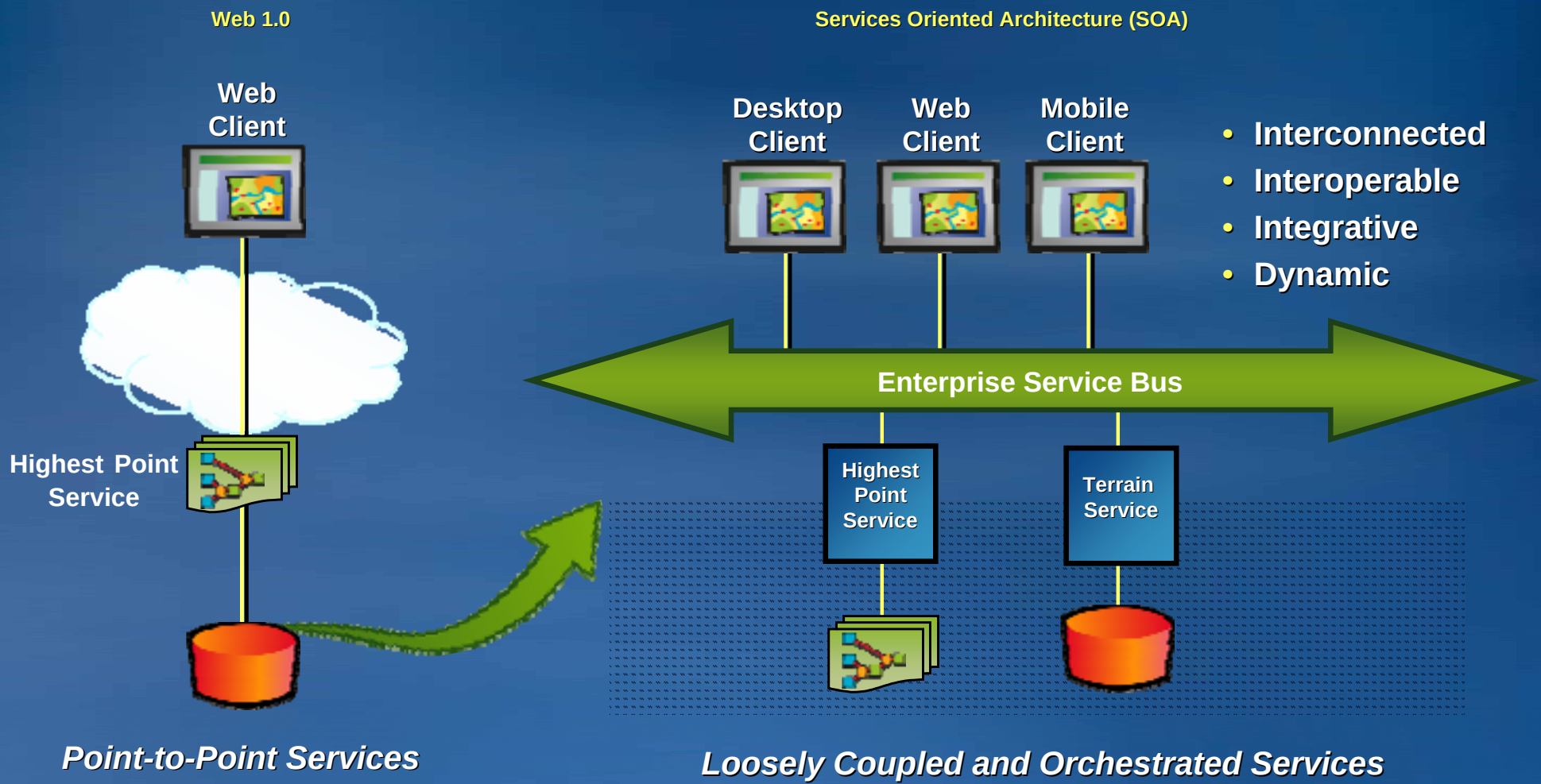
Platforms Go Beyond Application Silos

Service Oriented Architectures – a Framework for Integration



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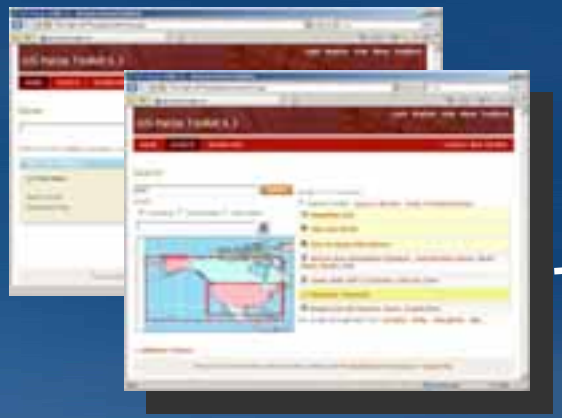
Example: Geoportal components

Content Management System (3rd Party)



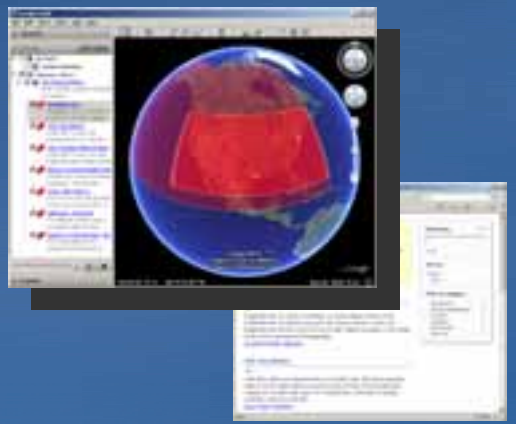
Geoportal

Map Previewer

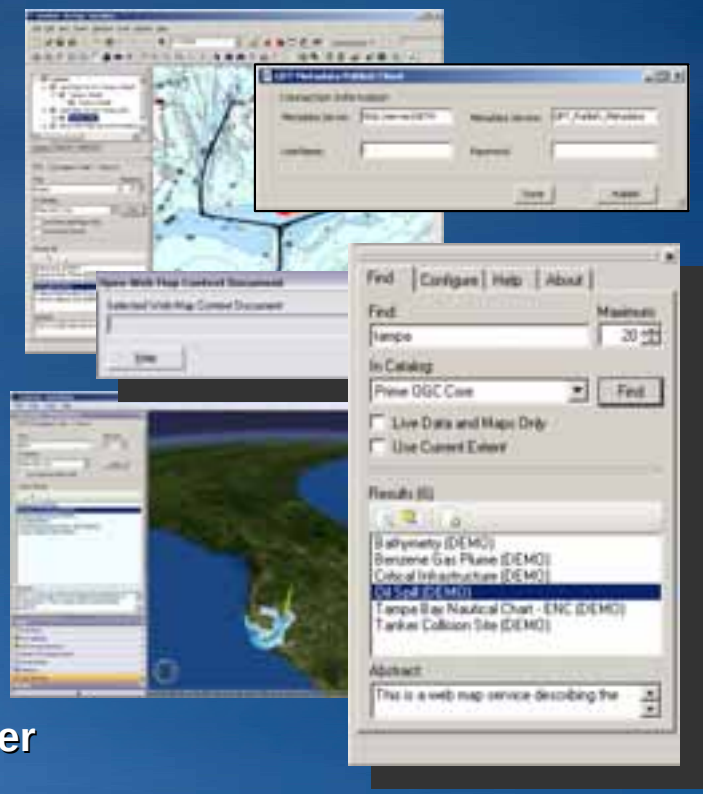
REST API

CSW

Catalog Service



GeoRSS, ATOM, KML



ArcMap
ArcCatalog
Java ADF
ArcGIS Explorer

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ESRI Geoportal Services

- OGC CS-W Discovery Interface
  - Supports interoperability with all OGC CSW standard services
- REST Discovery Interface
  - Supports OpenSearch
  - Supported Output Formats: GeoRSS, ATOM, HTML, JSON, and KML
  - Supported Filters: Free Text, Spatial Extent, Content Type, Data Category, Update Date
  - Search Widget
- GPT Consumes:
  - OGC CS-W, Z39.50, ArcIMS, WAF, OAI for metadata
  - OGC W*S, ArcGIS Server, ArcIMS, KML, GeoRSS for display

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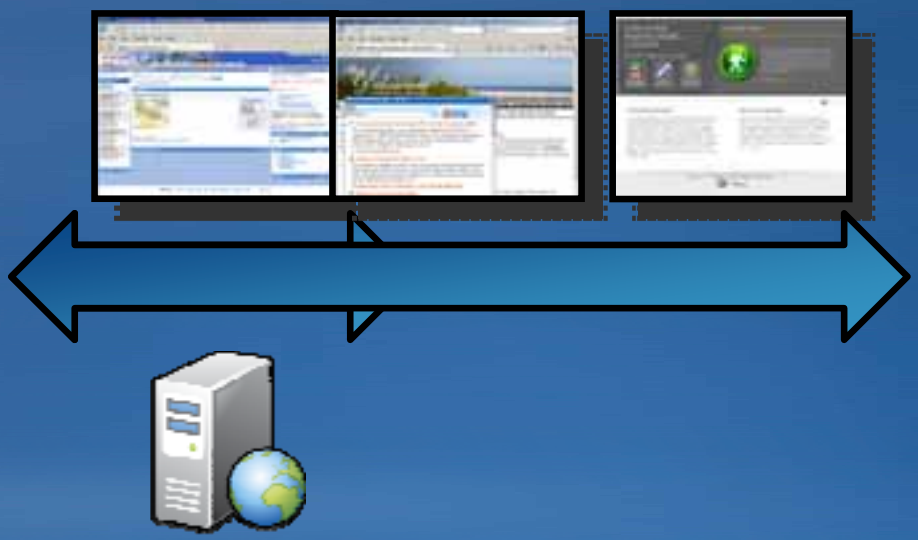
Example: Data.gov

- Data.gov – new initiative to transparent government
- Data.gov looked at building yet another catalog for data
- Geodata.gov and Data.gov collaborated
- Geodata.gov now supplies Data.gov with 150,000+ downloadable datasets through an OGC Web Service



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Example: Web Flex Viewer with search widget

Discover, View and combine shared data

- Discovered and use resources
- Processing functionalities

Technology behind the scenes

- ESRI Flex Mapping API and the ESRI Flex Viewer for
  - Visualizing OGC WMS, GeoRSS, …
- ESRI Geoportal REST interface for
  - Search
- ArcGIS Server for
  - Map services
  - Processing (calculate population, …)

http://webhelp.esri.com/geoportal_extension/9.3.1/index.htm#flex_widget.htm

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GEOPORTAL 10

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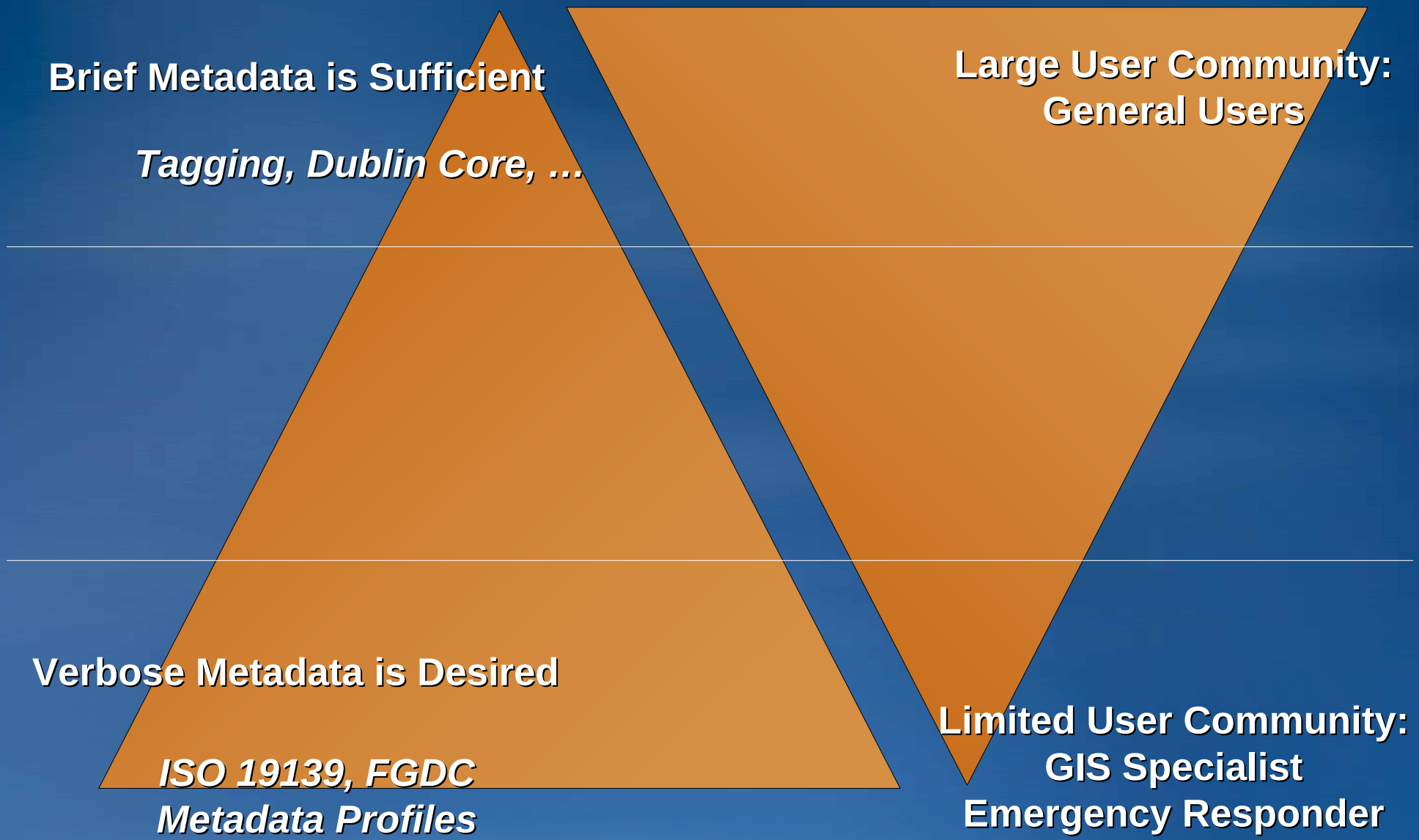
Unifying Structured Content with Unstructured Resources



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Geoportal Version 10

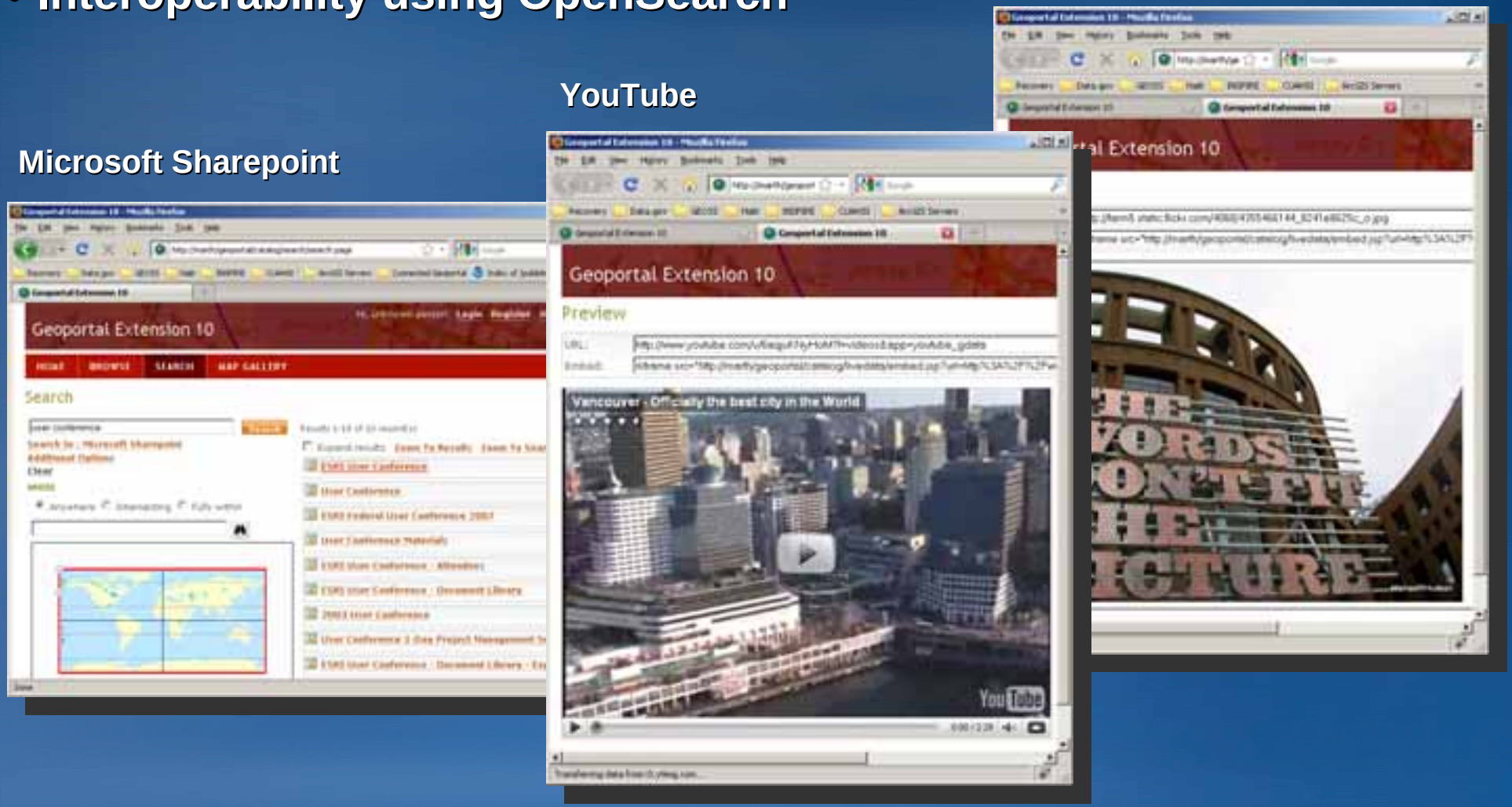
Discovery and Access of Unstructured Content

- **Customizable Search Adapters**
- **Interoperability using OpenSearch**

Flickr

YouTube

Microsoft Sharepoint



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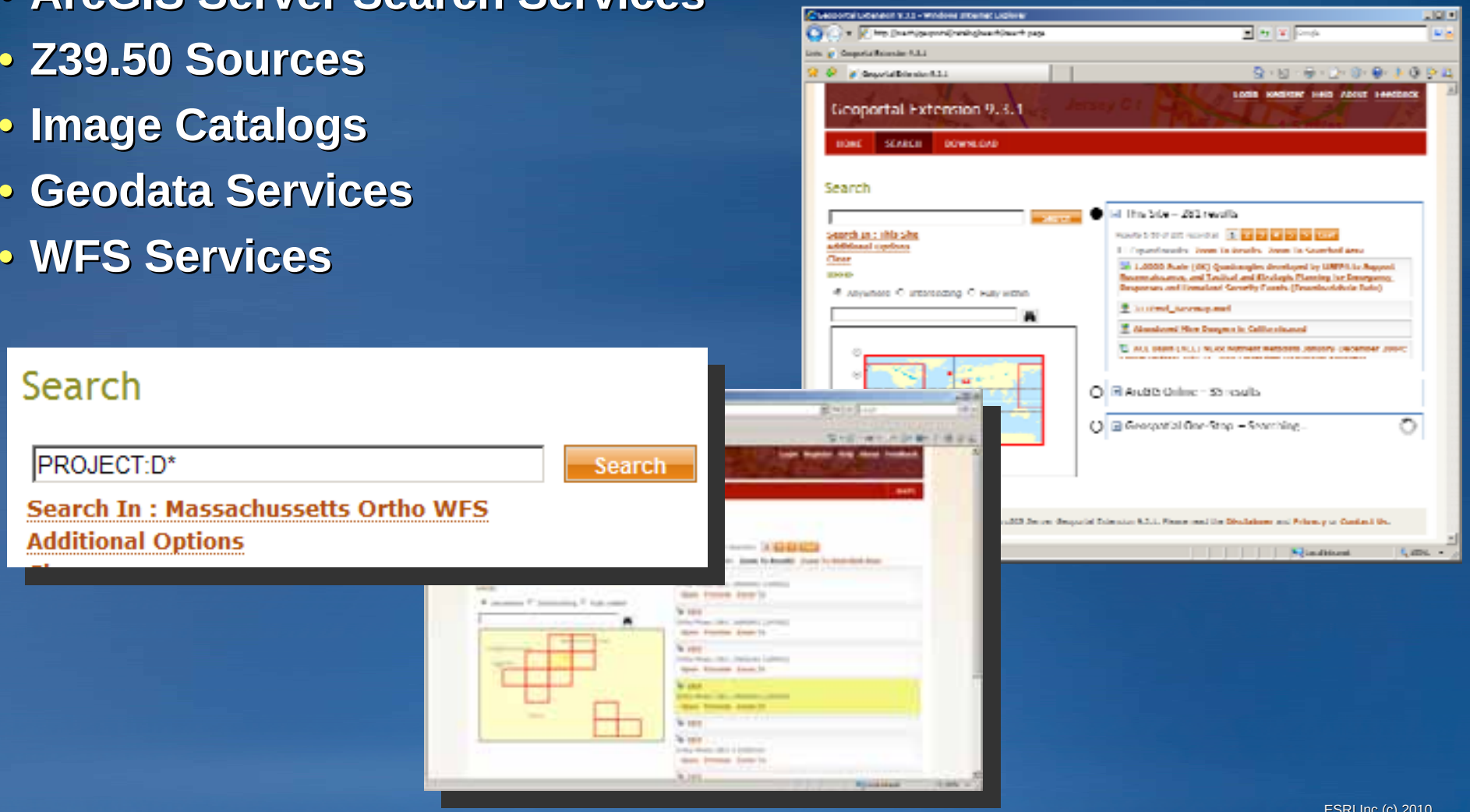
Additional Search Providers and Federated Search

- CS-W
- ArcGIS Server Search Services
- Z39.50 Sources
- Image Catalogs
- Geodata Services
- WFS Services



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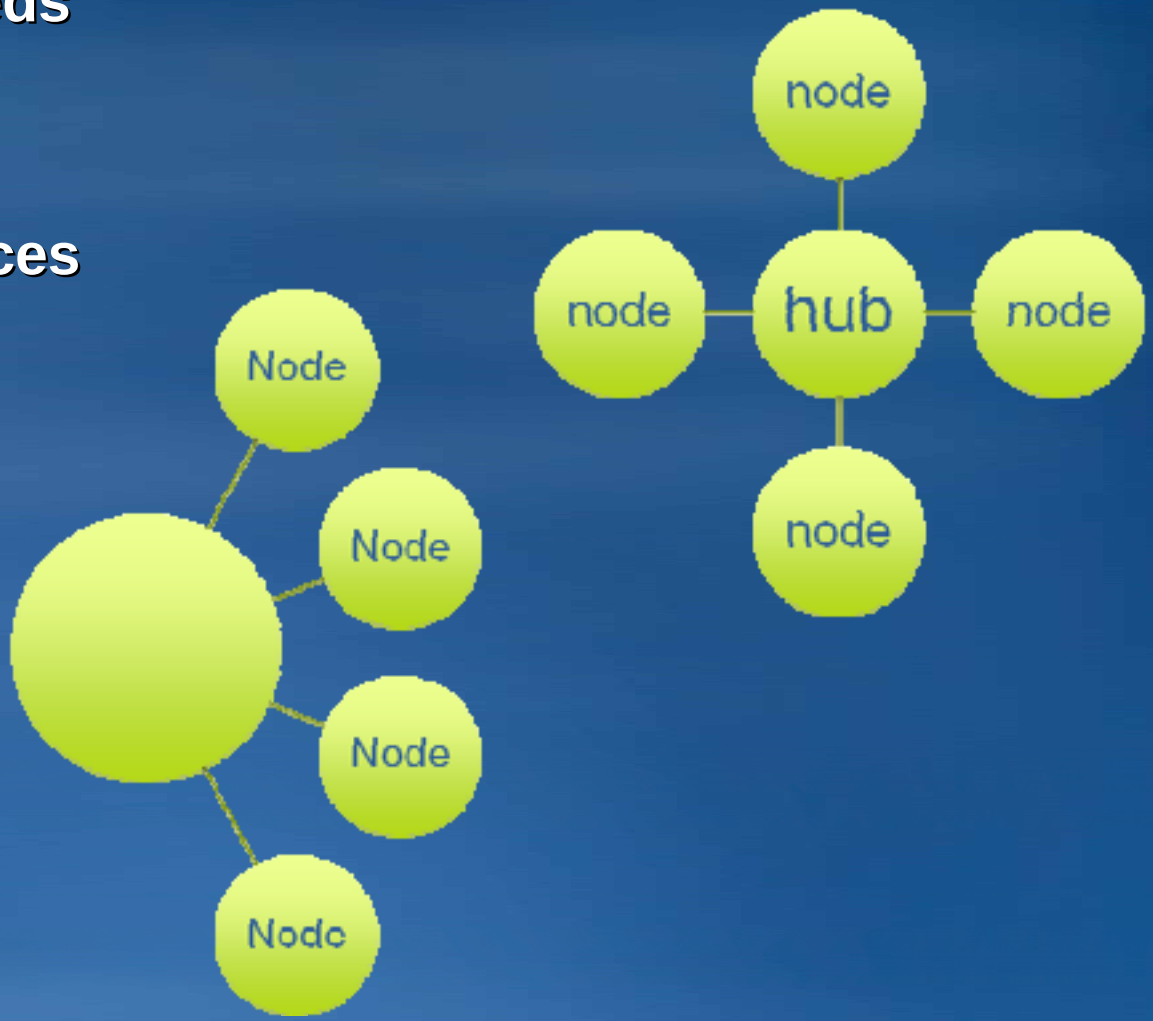
Synchronize Catalogs

- Looking at synchronizing multiple catalogs
- Driven by enterprise needs
- Near real-time
- Multi-directional
- Sync Metadata for Services
  - Generate
  - Update
  - Delete



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Server-side Harvesting

- Re-harvesting servers and uploaded services
- Harvest (geoportal) sitemaps
- Harvest geodata services (sync)
- Harvest ArcGIS Servers (sync)

- Retire desktop harvesting tool
- Retire desktop harvesting service
- Supports pure Linux implementation
- Harvesting and Directed Searching closely related

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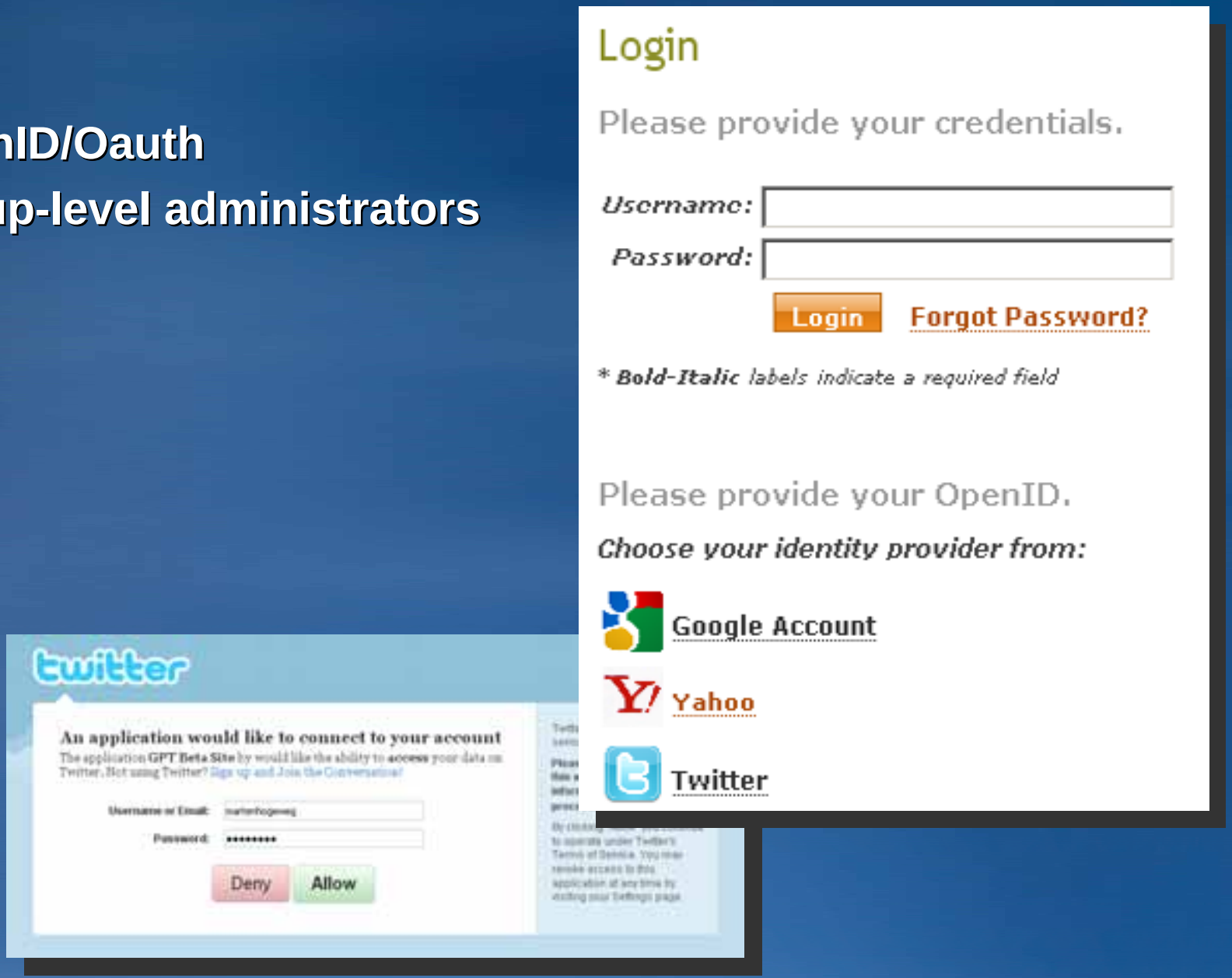
Identity Management

- **OpenID/Oauth**
- **Group-level administrators**



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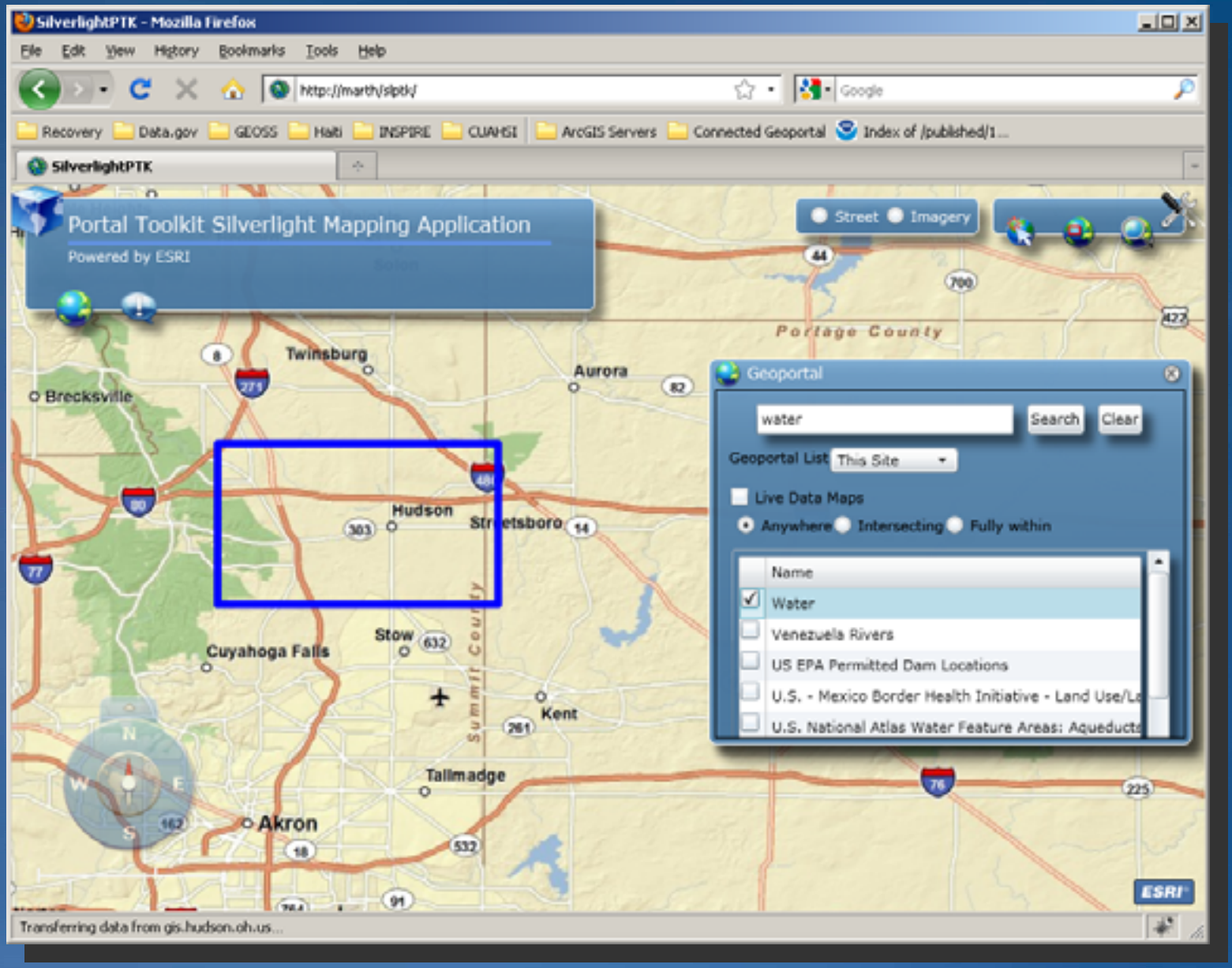
Silverlight Widget



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Update Desktop Extensions

- **CS-W Client for ArcGIS Desktop and Explorer**
  - **Update UI to match new 10 style**
  - **Support additional resource types**
- **Publishing Client for ArcGIS Desktop**
  - **Update UI to match new 10 style**
- **WMC Client for ArcMap**
  - **Rewrite in C#**

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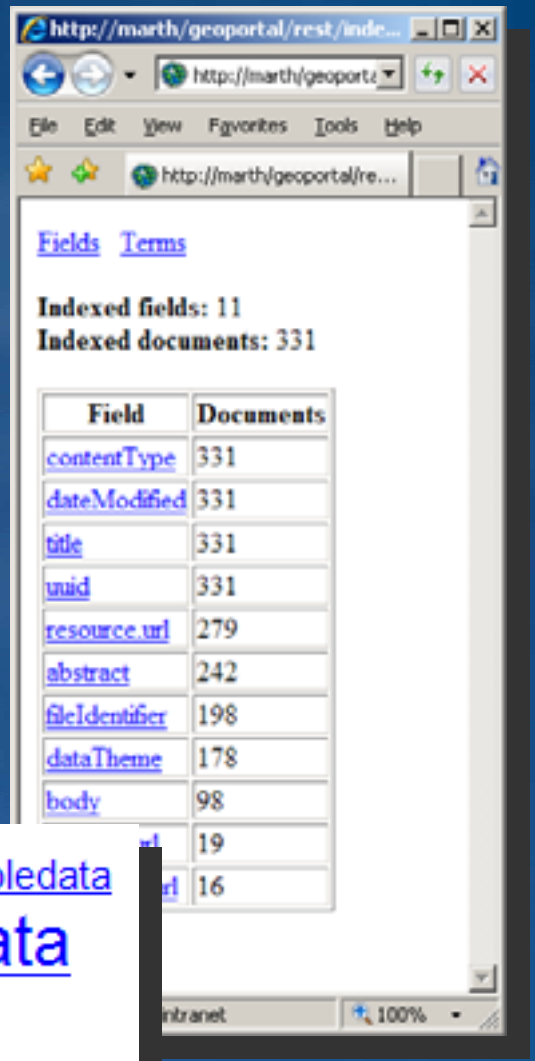
Index Statistics

- **Browse by metadata facets:**
  - **More like categories in retail store websites**
  - **Not editable, based on catalog content**
  - **Exposed through REST**
- **Use to build:**
  - **Browsing capabilities**
  - **Word clouds**
  - **Content Channels**
  - **Reports for Administrators**



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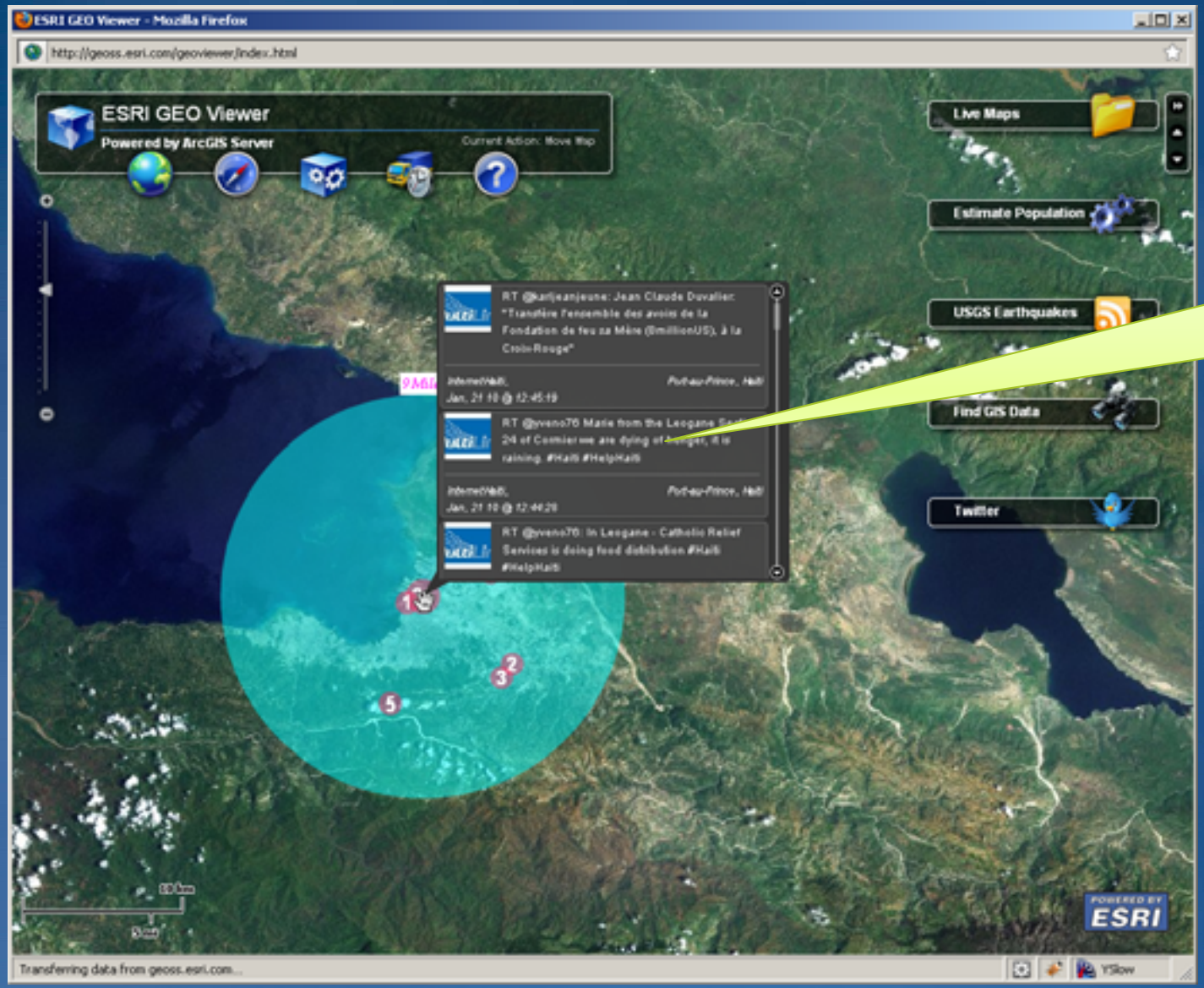
Twitter as data source



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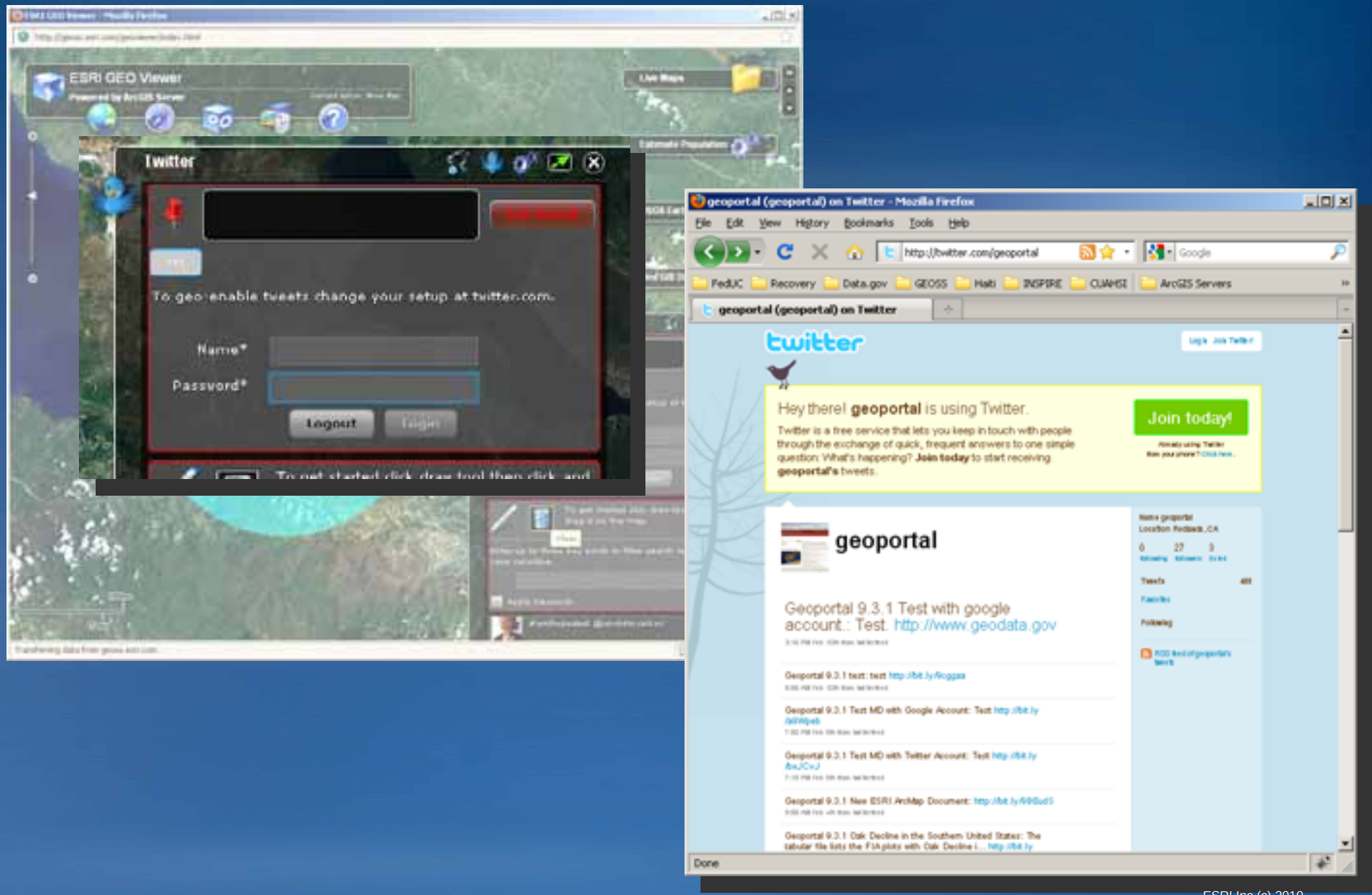
Twitter client



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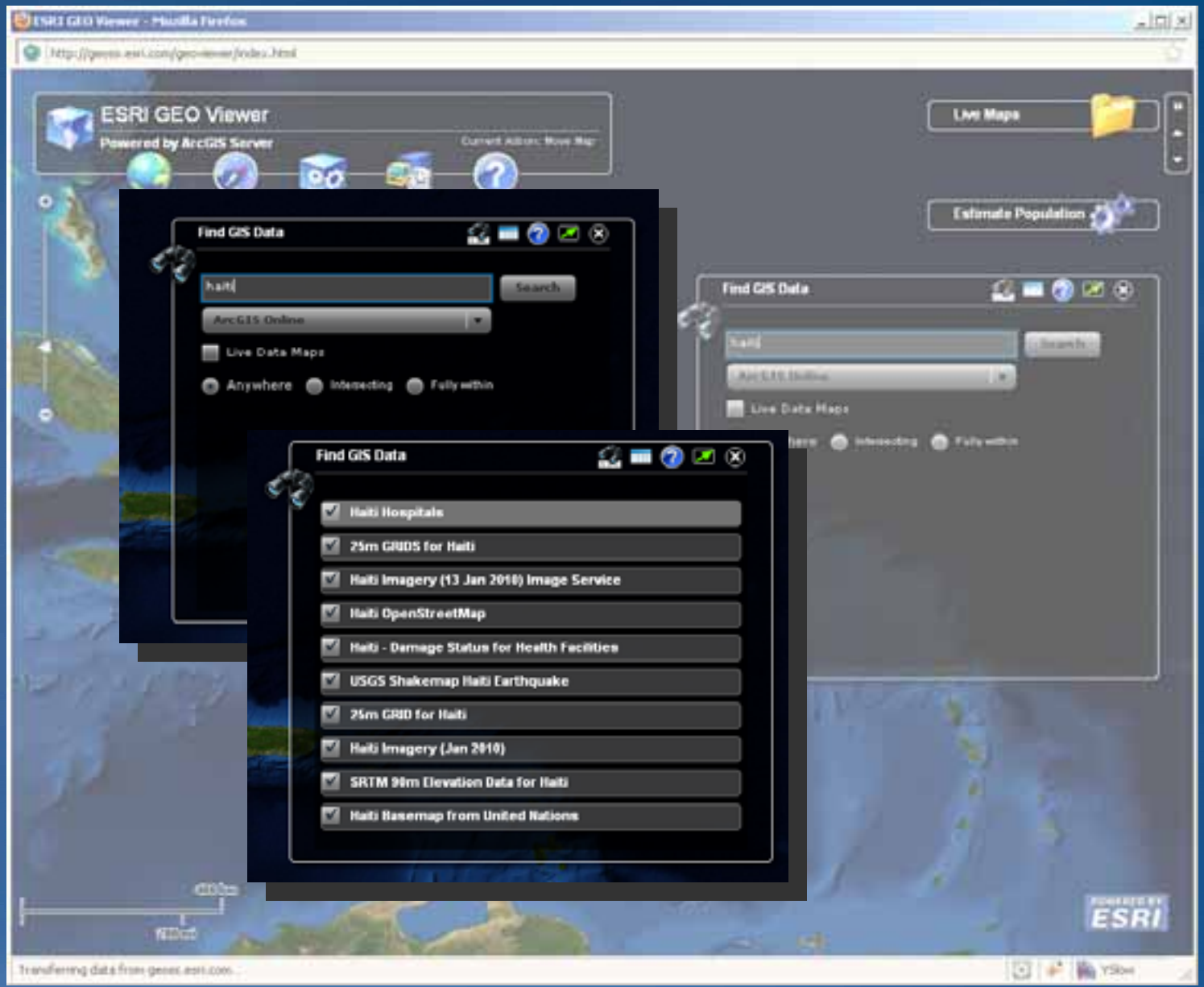
Expand on ArcGIS Online Integration



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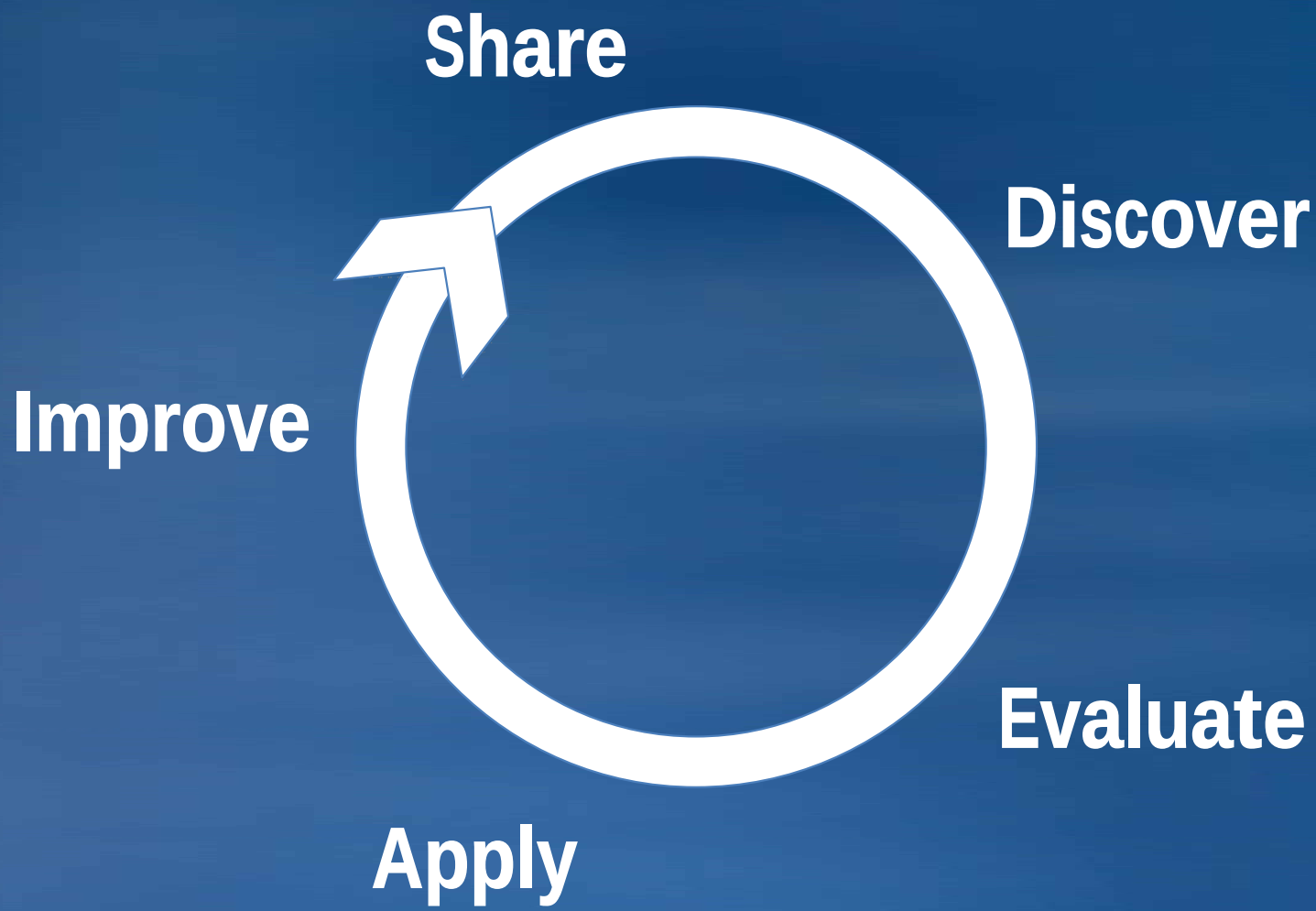
Questions?



SDI /Geoportal User Group – Friday 10:30 AM Room 149 B

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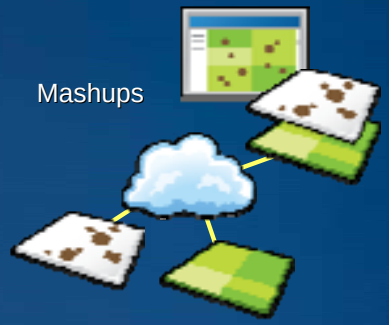
ArcGIS Servers

GIS Users

Geodatabase

Web Users

Web GIS



ArcGIS Server

ArcGIS Online

Open Standards

ArcGIS Desktop Authors

Web Blog

Web Blog

Mashups

Mashups

Browser

Browser

Browser

Browser

Web Map

Map

Web Map

Map

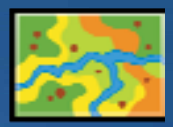
Web Map

Map

Raster Files

Raster Files

Web Map


Map

Web Map

Map

Web Map

Map

Web Map

Map

Web Map

Map

Explorer

Web Map

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Globes

Layers

Database

Files

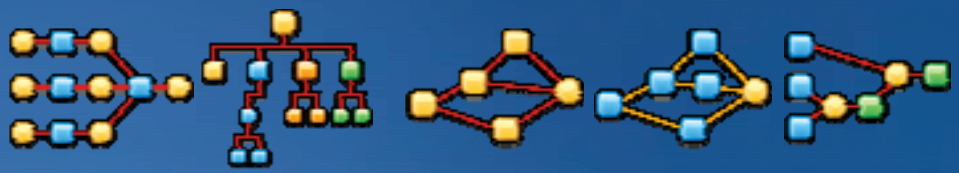
Files

Files

CD/DVD

Internet

Models



Models

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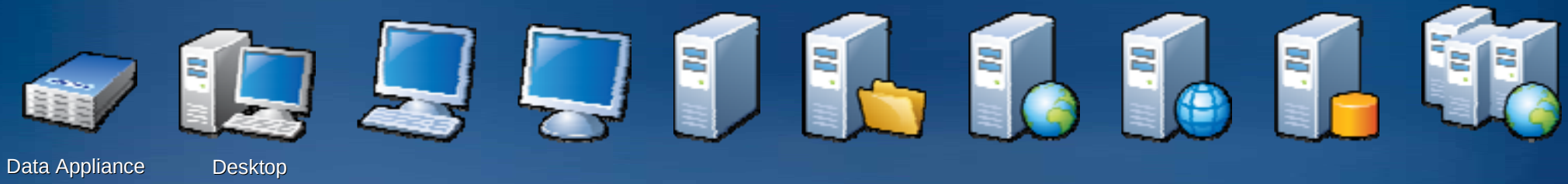

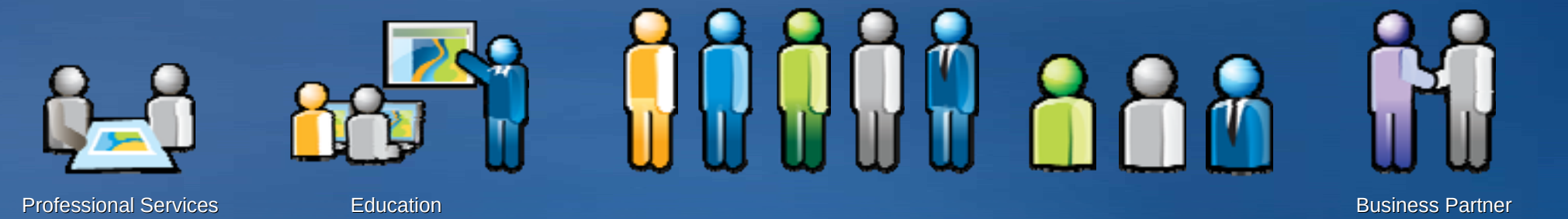

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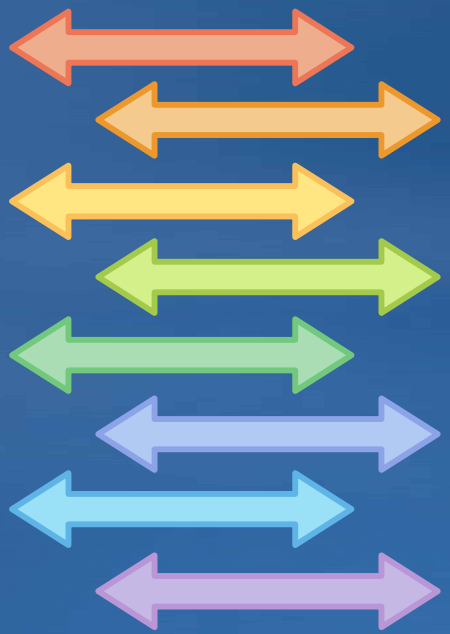
ArcGIS ArcGIS ArcGIS ArcGIS ArcGIS ArcGIS ArcGIS



ArcGIS

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ArcGIS

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