The Cyprus DEM Portal and INSPIRE Geoportal

Esri User Conference
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Senior Consultant

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Agenda

- Introduction
- Cyprus DLS Portal
- Cyprus INSPIRE Geoportal
- Questions & Answers

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The Cyprus DLS Portal and INSPIRE Geoportal

Introduction

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NetU at a Glance

- Leading IT solutions & services organization in the Eastern Mediterranean
- Presence in Cyprus, Greece and Serbia
- Strong local and international activity
- Serving mid-market to large organizations
- Full spectrum of IT solutions & services
- Specialization in Public Sector. Main IT provider for the Government of Cyprus
- Strong presence in Private Sector
- IS0 9001:2008 and ISO 27001:2005 certified

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Technology Solutions

Integration

- Service Oriented Architecture
- Business Process Management
- Mobility

Data

- Business Intelligence
- Data Warehousing
- Big Data
- Data Migration

Software

- Custom Applications
- Application Migration
- Portals & Collaboration
- Enterprise Content Management
- Geographical Information Systems

Infrastructure

- Hardware & Networking
- Security
- O/S & Virtualization
- Cloud Computing
- Systems Management

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Cyprus DLS Portal

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Cyprus DLS Portal Introduction

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Cyprus DLS Portal Introduction

Technical Implementation of GIS Solution

Purpose of GIS in DLS Portal: integration within eApplications and National Maps

GIS Architecture – Integration

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Cyprus DLS Portal Architecture

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Environment Architecture

System Design

Development

Customization

Configuration

Parameterisation

Testing

Quality Assurance

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GIS Software

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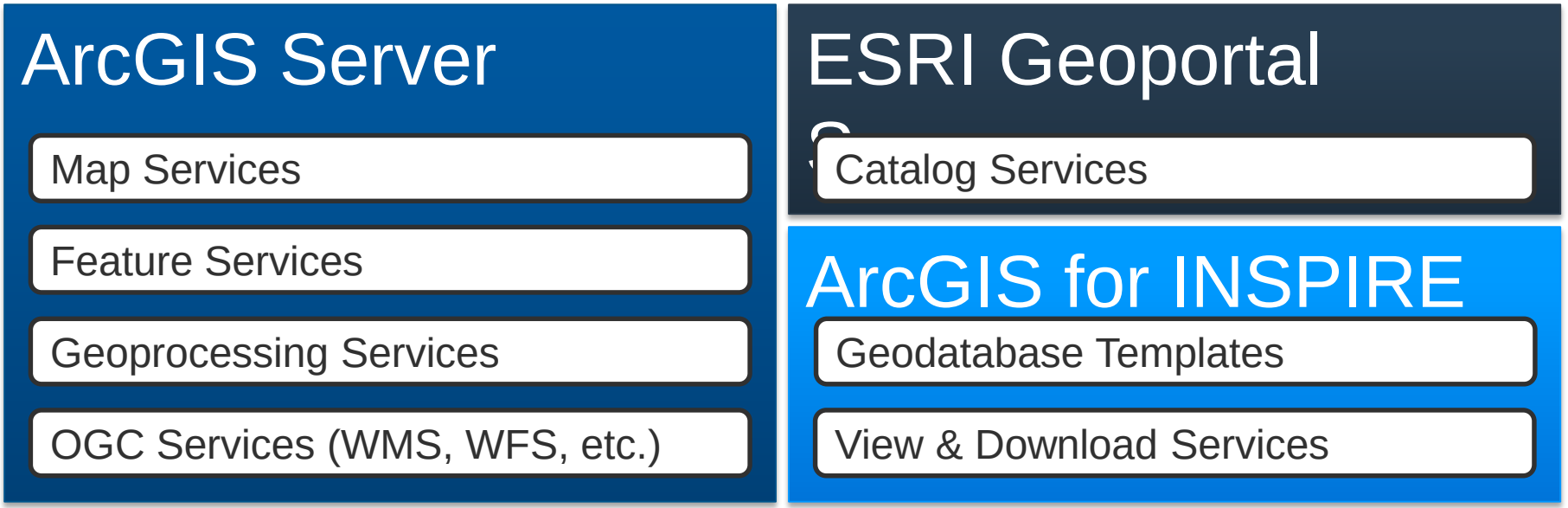
GIS Architecture



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Cyprus DLS Portal Map Viewers

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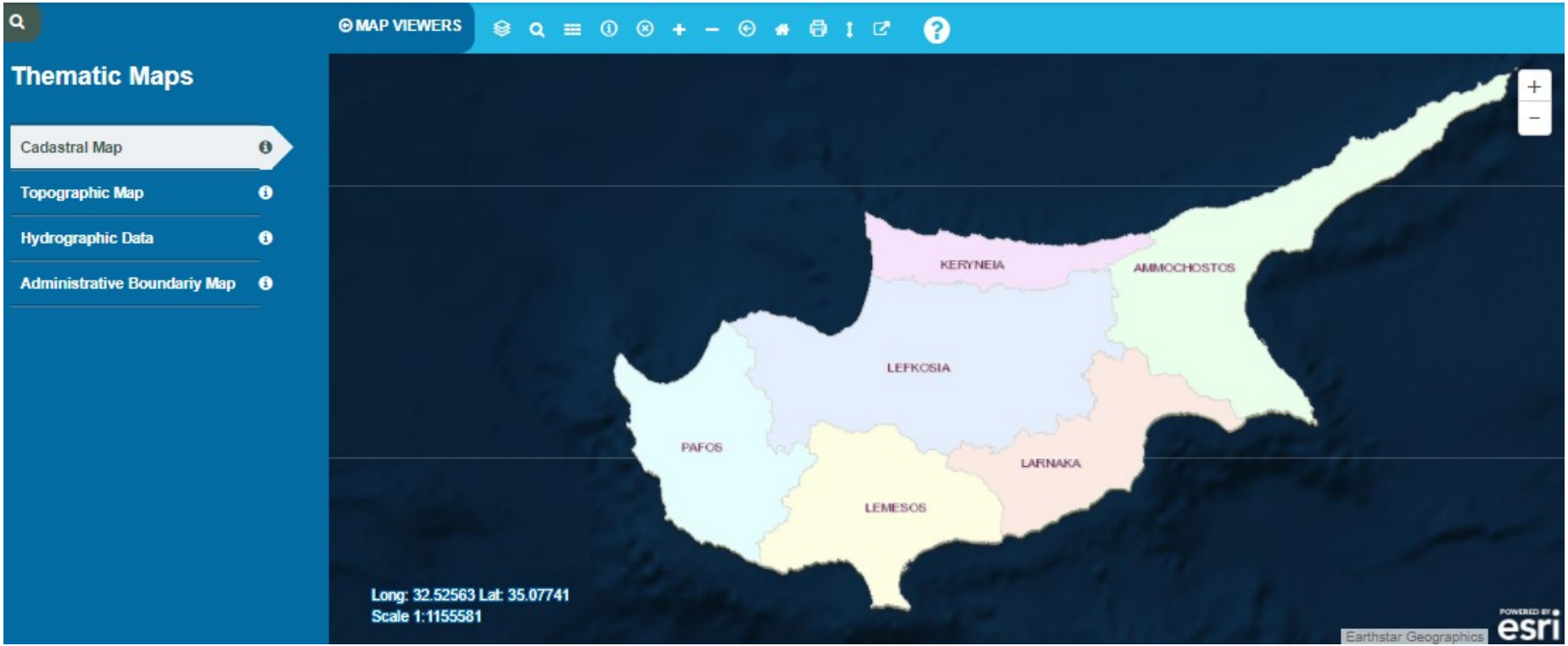
National Maps



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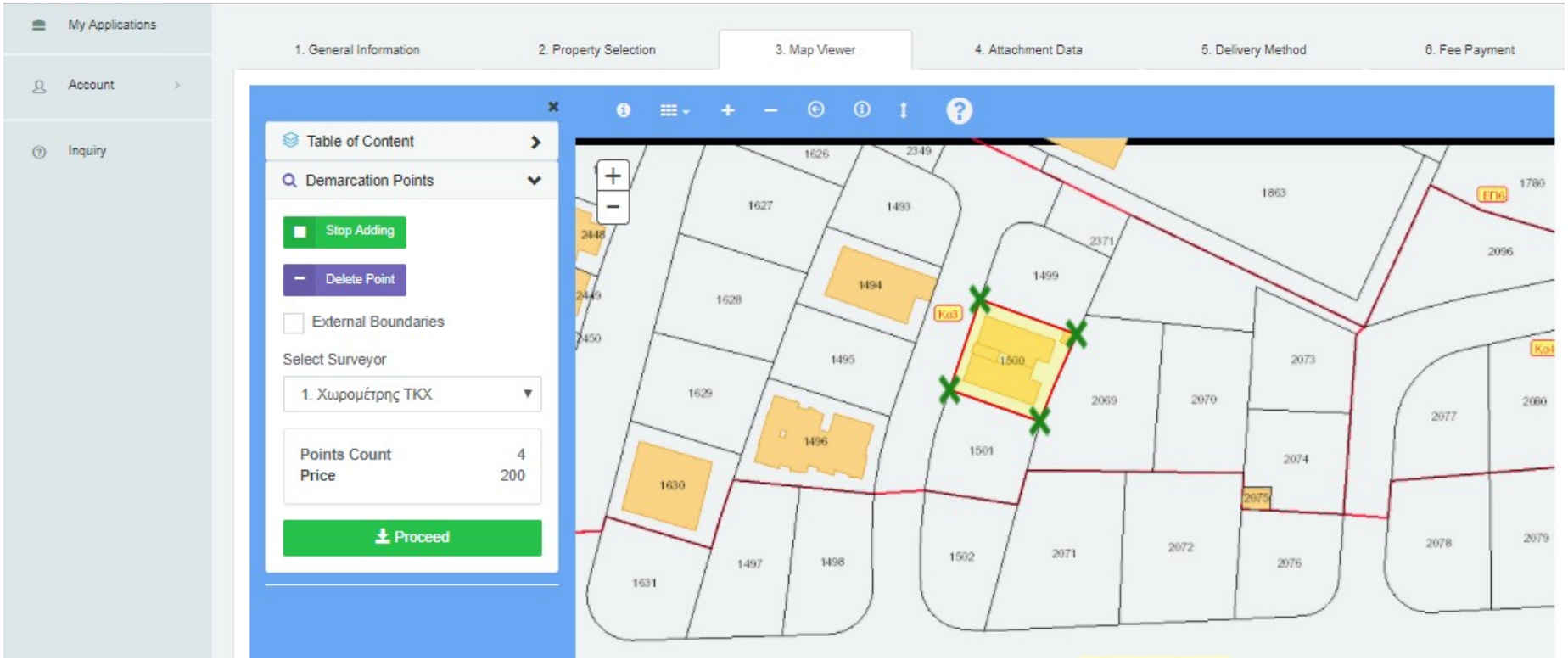
Maps Within eApplications



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Map Viewer Functionality

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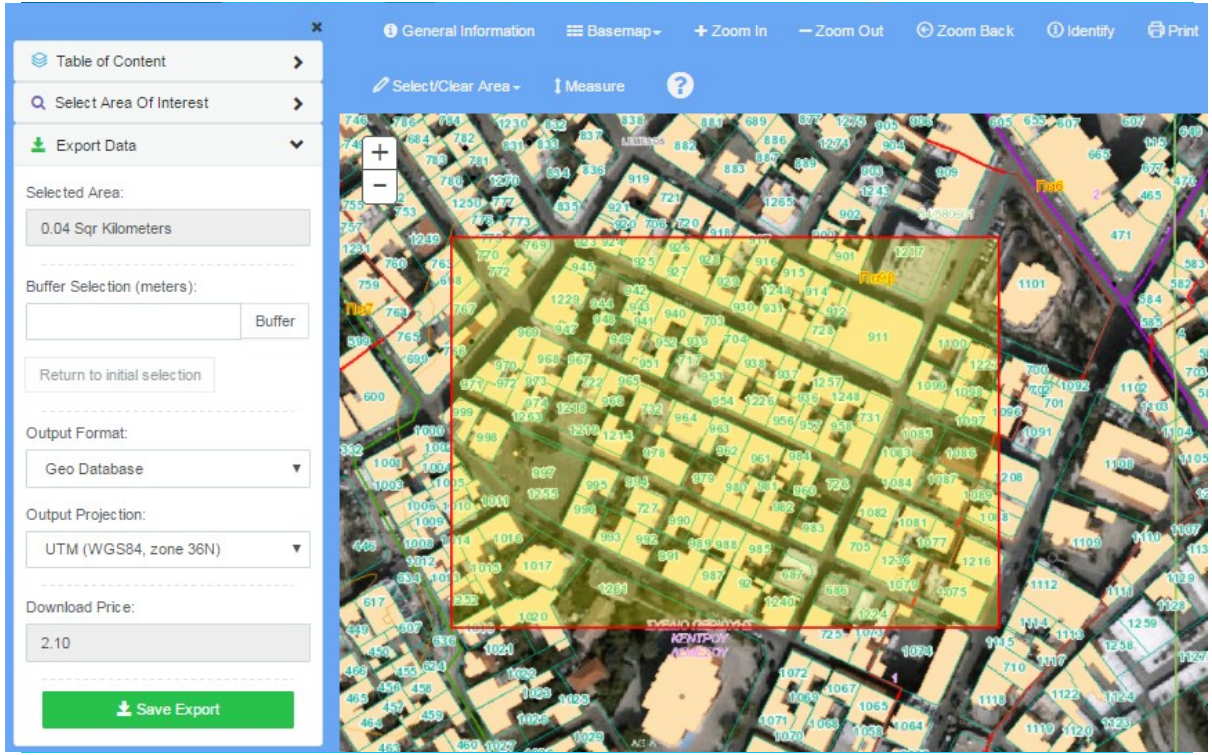
Map Viewer Functionality

- Attribute Table
- Parcel information
- Export Data



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Cyprus DLS Portal Infrastructure

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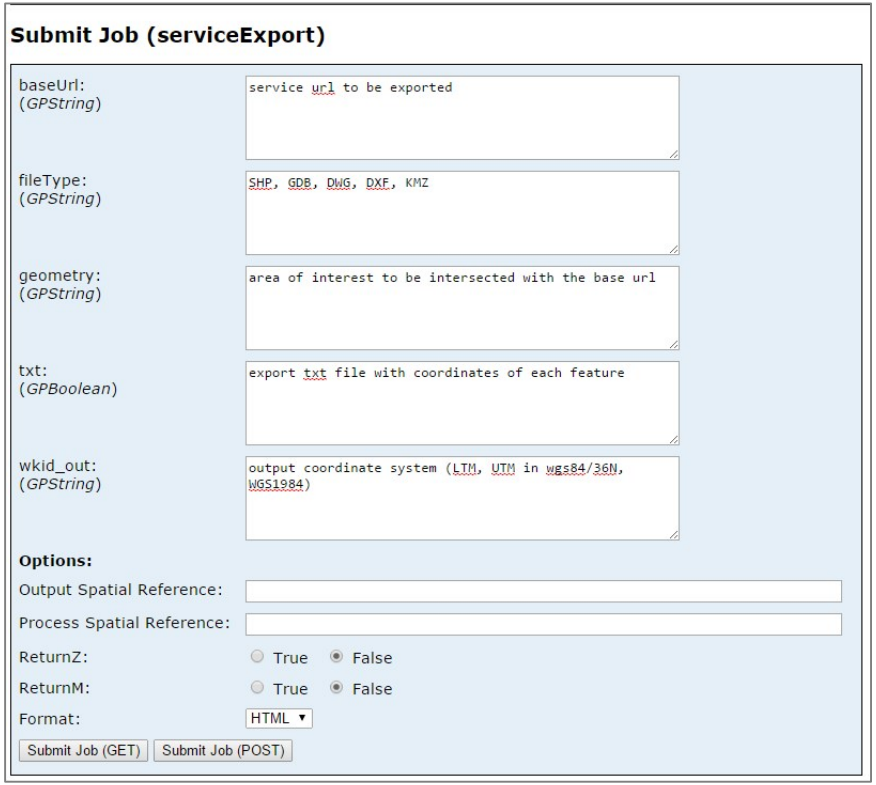
GIS Infrastructure

- Map Documents
- National REST Services
- INSPIRE Rest Services
- Geoprocess Services



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ETL (Extract, Transform & Load)

Model Builder

Python Scripts

```
import arceditor

# Import arcpy module
import arcpy

# Import Sql connect
import pyodbc

# Local variables:
SQL_GIS_DB_calc_DLS_Parcels_SPINDX = "C:\\PyScripts\\gis_SQL.sde"
SQL_DLS_Parcels_with_SPINDX = SQL_GIS_DB_calc_DLS_Parcels_SPINDX
ORACLE_sdb_parcel = "C:\\PyScripts\\gisportal_DEV_DLSDB01.sde\\GIS.sdb\\GIS.sdb_parcel_test"
ORACLE_dcdb_parcel = "C:\\PyScripts\\gisportal_DEV_DLSDB01.sde\\GIS.dcdb\\GIS.dcdb_parcel_test"
DCDB_Feature_Layer = "DCDB_Feature_Layer"
DLS_Parcels_DCDB_APPENDED = DCDB_Feature_Layer
DLS_PARCELS = "C:\\GIS\\Connections\\ETL_GIS.sde\\gis.GIS.DLS_PARCELS_11042015"
#DLS_Parcels_EMPTY = DLS_PARCELS
DLS_Parcels_DCDB_Calc = DLS_Parcels_DCDB_APPENDED
DLS_Parcels_SDB_APPENDED = DLS_Parcels_DCDB_Calc
SDB_Feature_Layer_with_selected_SRC_SL_CODE = "SDB_Feature_Layer_with selected_SRC_SL_CODE"
SDB_Feature_Layer_withSource_NULL = "SDB_Feature_Layer_withSource_NULL"
DLS_Parcels_SDB_Calc = SDB_Feature_Layer_withSource_NULL

# Set Geoprocessing environments
arcpy.env.parallelProcessingFactor = "4"

print "Merging Parcel Script Started at: " + time.strftime("%a, %d %b %Y %I:%M:%S %p %Z", time.localtime())
fw = open('C:\\PyScripts\\MergeParcels\\MergeParcels_log.txt','a')
fw.write('\n')
fw.write("Merging Parcel Script Started at: " + time.strftime("%a, %d %b %Y %I:%M:%S %p %Z", time.localtime()))
fw.write('\n')
fw.write('-----------------------------------------------------------------------------------------------------')
fw.write('\n')
```

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ETL (Extract, Transform & Load)

Configuration

- Feature classes database lock cleaning
- Spatial indexes rebuilding
- Environment variables configuration
- Parallel processing
- Multithreading

Checks - Notifications

- Before start – check status of internal DLS ETL
- ETL Logs
  - Database – audit fields and status
  - Log txt files for checking python script details
- CMD files – Windows scheduling – Jobs history
- Email notification

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ETL (Extract, Transform & Load)

Categories

- Truncate append database
- Parcel layer duplication (Parcel_Load) – preparation of duplicate layer – minimum downtime
- Export labels into CAD format
- Truncate/Append Layers via batches
- Create fields / joins/ selections / Calculate field values

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ETL (Extract, Transform & Load)

Integration With Other Systems

- Active directory
- Government Gateway
- MFT server - data exported are being called by MFT – kept into user profile
- Job Scheduler

Data Related

- Exported data kept into user profile as zip file
- User notification via email and sms
- Application history and status of exported data

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INSPIRE Directive

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INSPIRE Mandates

- Metadata
- Data Specifications
- Network Services
- Data & Service Sharing
- Monitoring & Reporting

Source: http://inspire.ec.europa.eu

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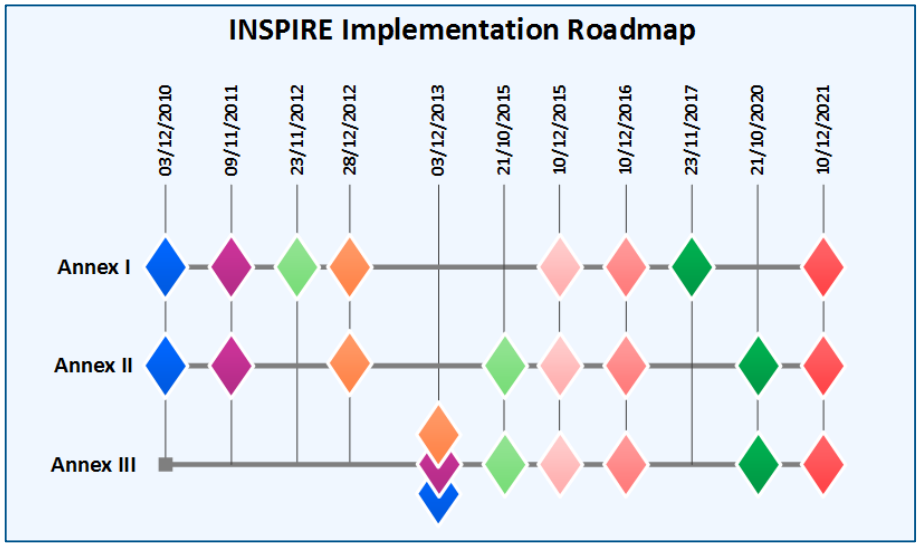
INSPIRE Implementation Roadmap



Discovery metadata shall be available for spatial data sets and services

Spatial data sets shall be available for **discovery and view** from the INSPIRE geo-portal (data does not yet need to be conformant to IR-ISDSS)

Spatial data sets shall be available for **download and transformation** (whenever applicable[1]) from the INSPIRE geo-portal (data does not yet need to be conformant to IR-ISDSS[2])

Newly collected and extensively restructured spatial data sets shall be **conformant** to IR-ISDSS (incl. **metadata for interoperability**) and available through network services

All spatial data sets shall be **conformant** to IR-ISDSS (incl. **metadata for interoperability**) and available through network services

All invocable spatial data services shall be **conformant to Annex V of IR-ISDSS** (incl. **metadata**)

Invocable spatial data services related to newly collected and extensively restructured spatial data sets shall be **conformant to Annexes VI and** (where practicable) **VII of IR-ISDSS** (incl. **metadata**)

All invocable spatial data services shall be **conformant to Annexes VI and** (where practicable) **VII of IR-ISDSS** (incl. **metadata**)

e: http://inspire.ec.europa.eu/images/Roadmap_INSPIRE_Implementation2.jpg

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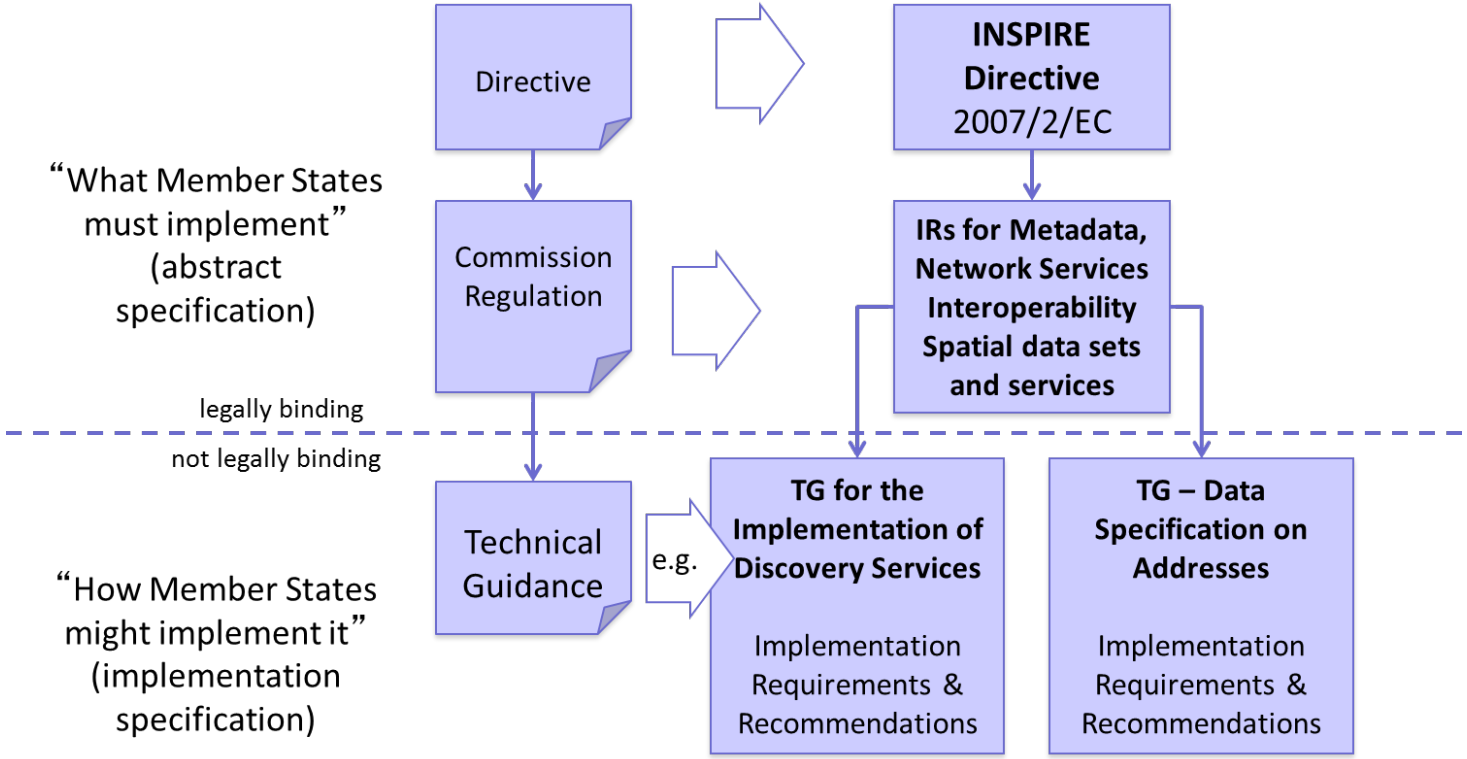
INSPIRE IRs vs TG



Source: http://inspire.ec.europa.eu

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INSPIRE Data Themes

Annex I	Annex II	Annex III	
• Coordinate Reference System • Geographical Grid System • Geographical Names • Administrative Units • Addresses • Cadastral Parcels • Transport Networks • Hydrography • Protected Sites	• Elevation • Land Cover • Orthoimagery • Geology	• Statistical Units • Buildings • Soil • Land Use • Human Health and Safety • Utility and Governmental Services • Environmental Monitoring Facilities • Production and Industrial Facilities • Agricultural and Aquacultural Facilities • 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 • Mineral Resources

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Cyprus INSPIRE Geoportal Architecture

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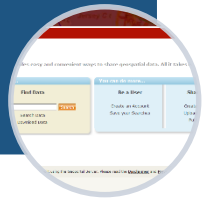
Cyprus INSPIRE Geoportal

- Map Services
- Feature Services
- Geoprocessing Services
- OGC Services (WMS, WFS)

ArcGIS Server

- Geoportal Server Frontend
- Geoportal Server Backend
- Catalog Services

ESRI Geoportal Server



- Geodatabase Templates
- INSPIRE View Services
- INSPIRE Download Services

ArcGIS for INSPIRE

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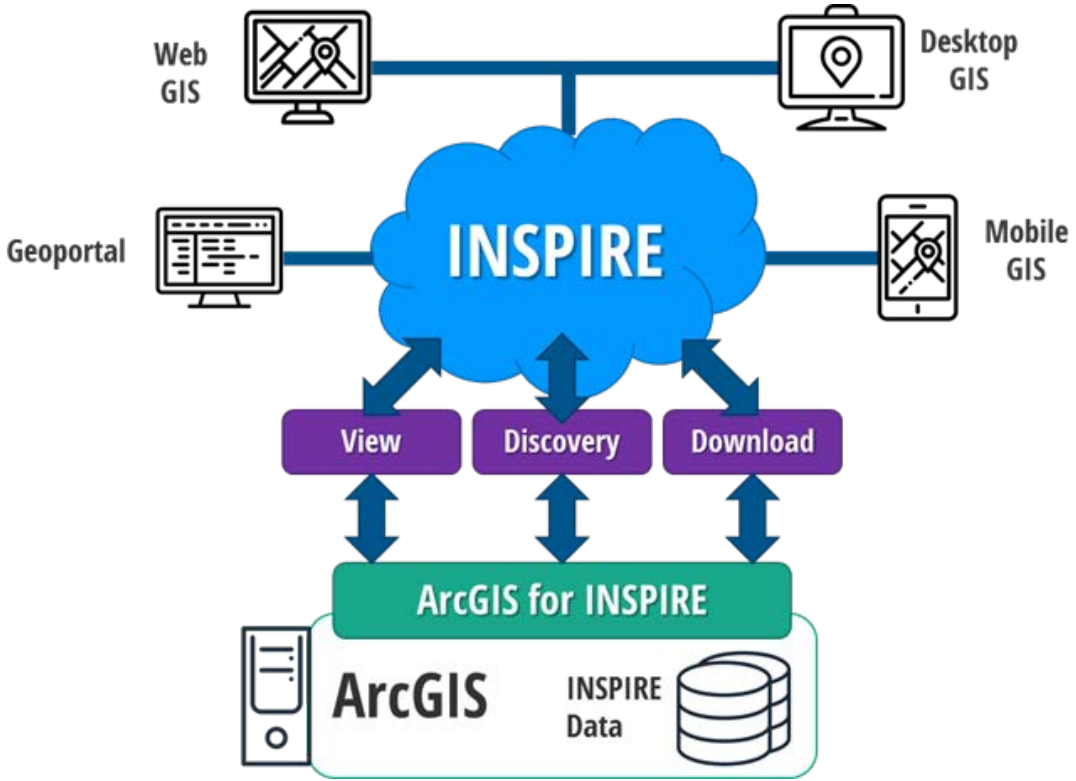

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Cyprus INSPIRE Geoportal Infrastructure

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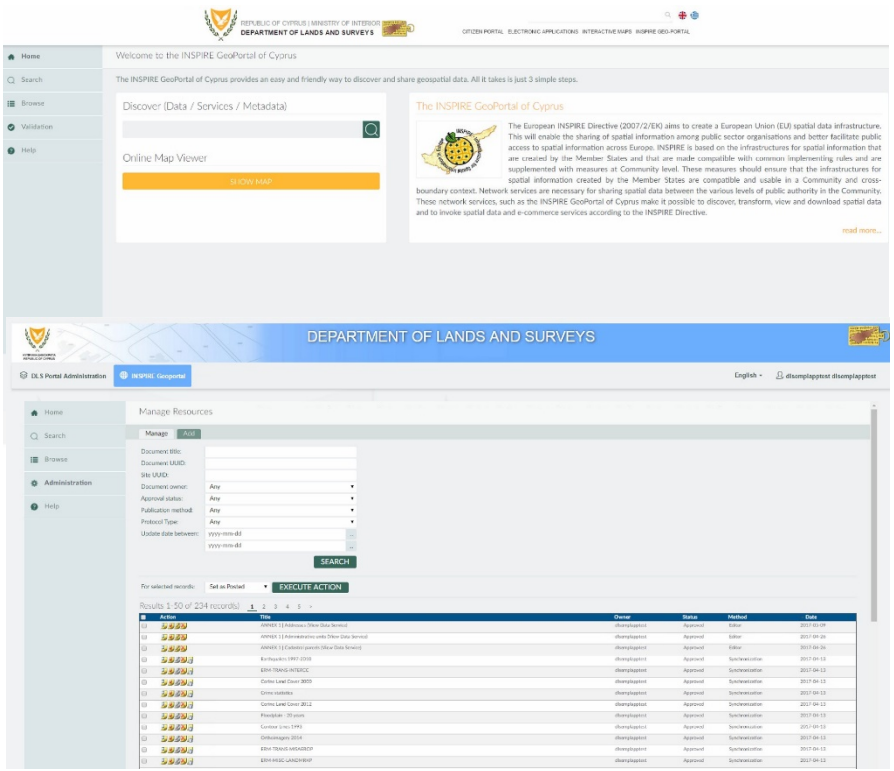
Cyprus INSPIRE ESRI Geoportal Server

Frontend

- Public
- View/Browse/Validate Metadata Records
- Users from Government Gateway (Ariadni)

Backend

- Not Public
- View/Browse/Validate Metadata Records
- Administering Metadata Records
- Users from Active Directory



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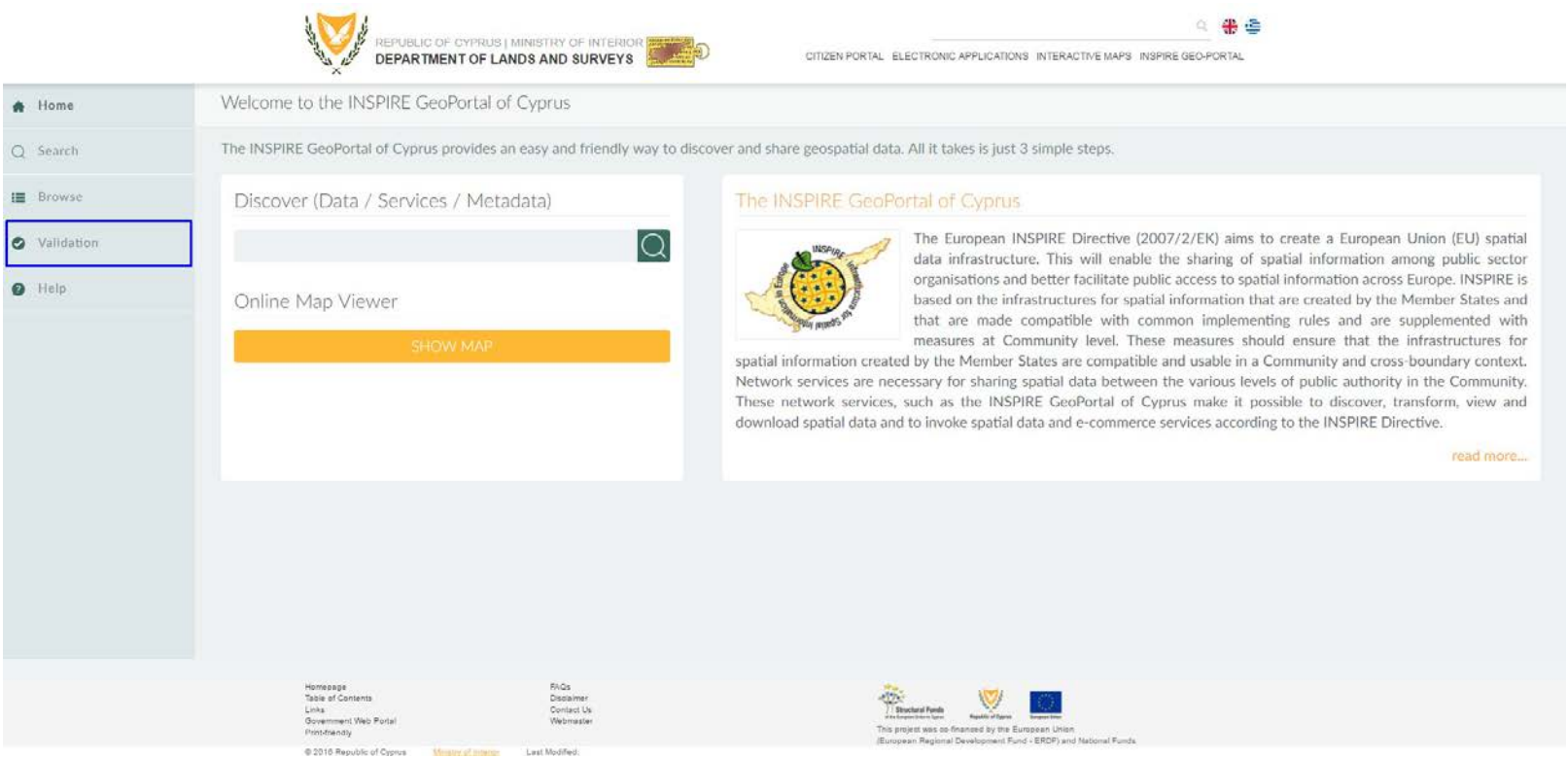
Cyprus INSPIRE Geoportal Frontend



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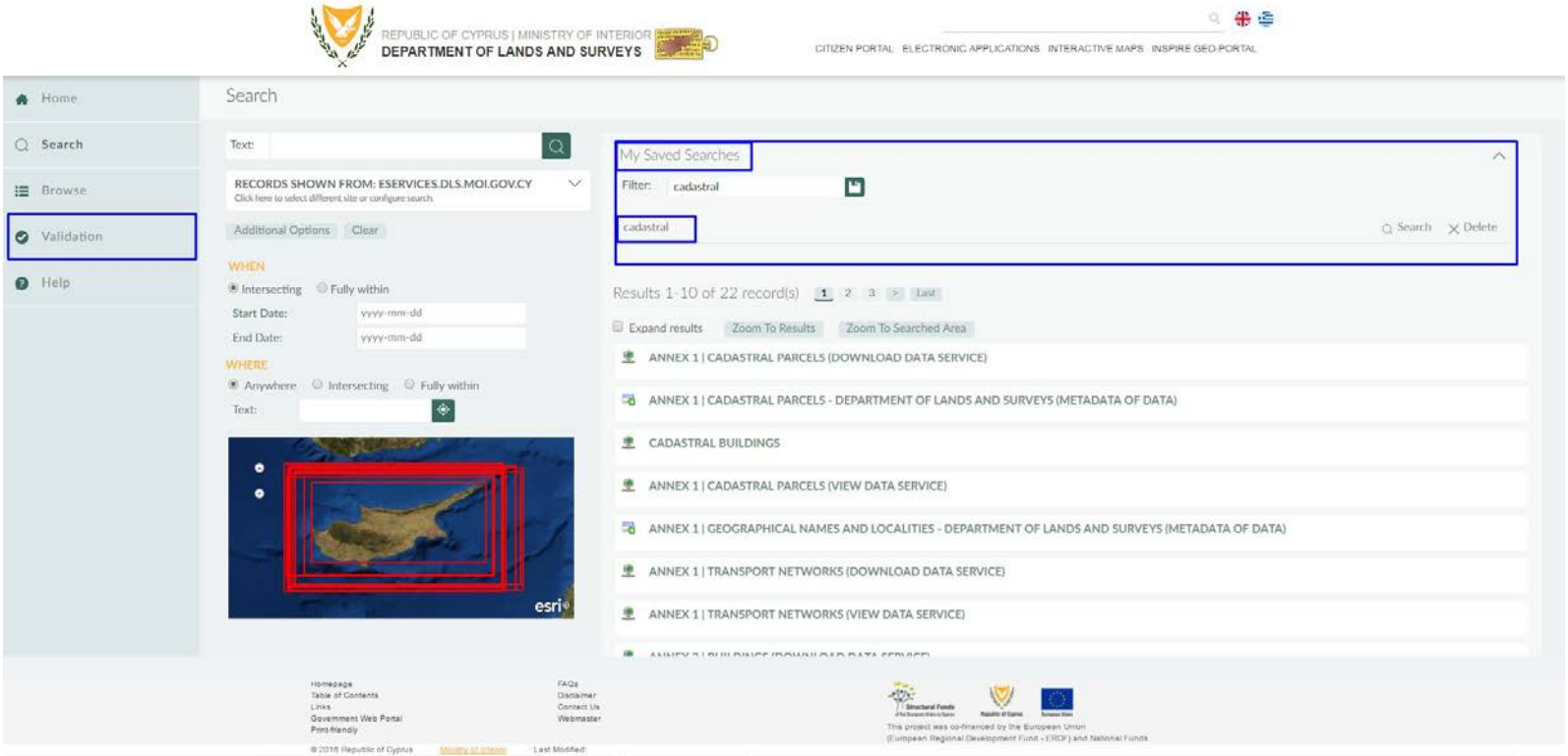

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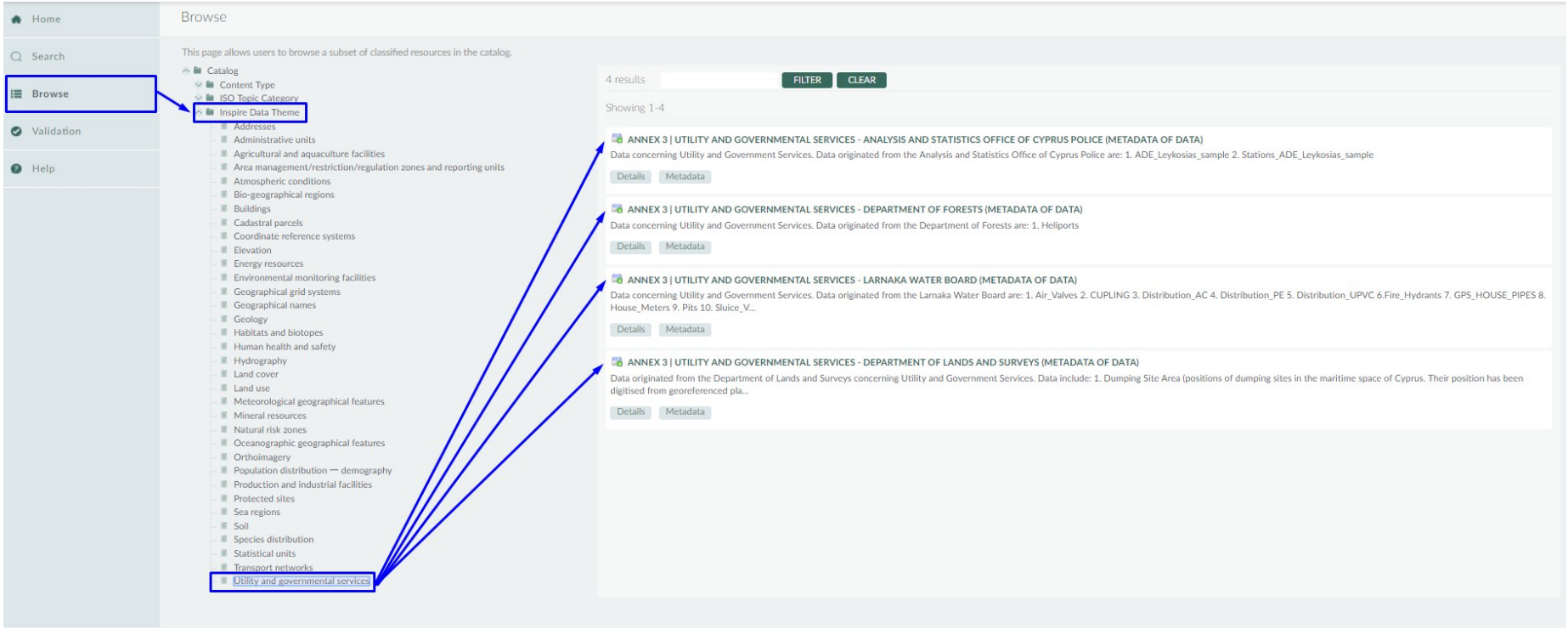

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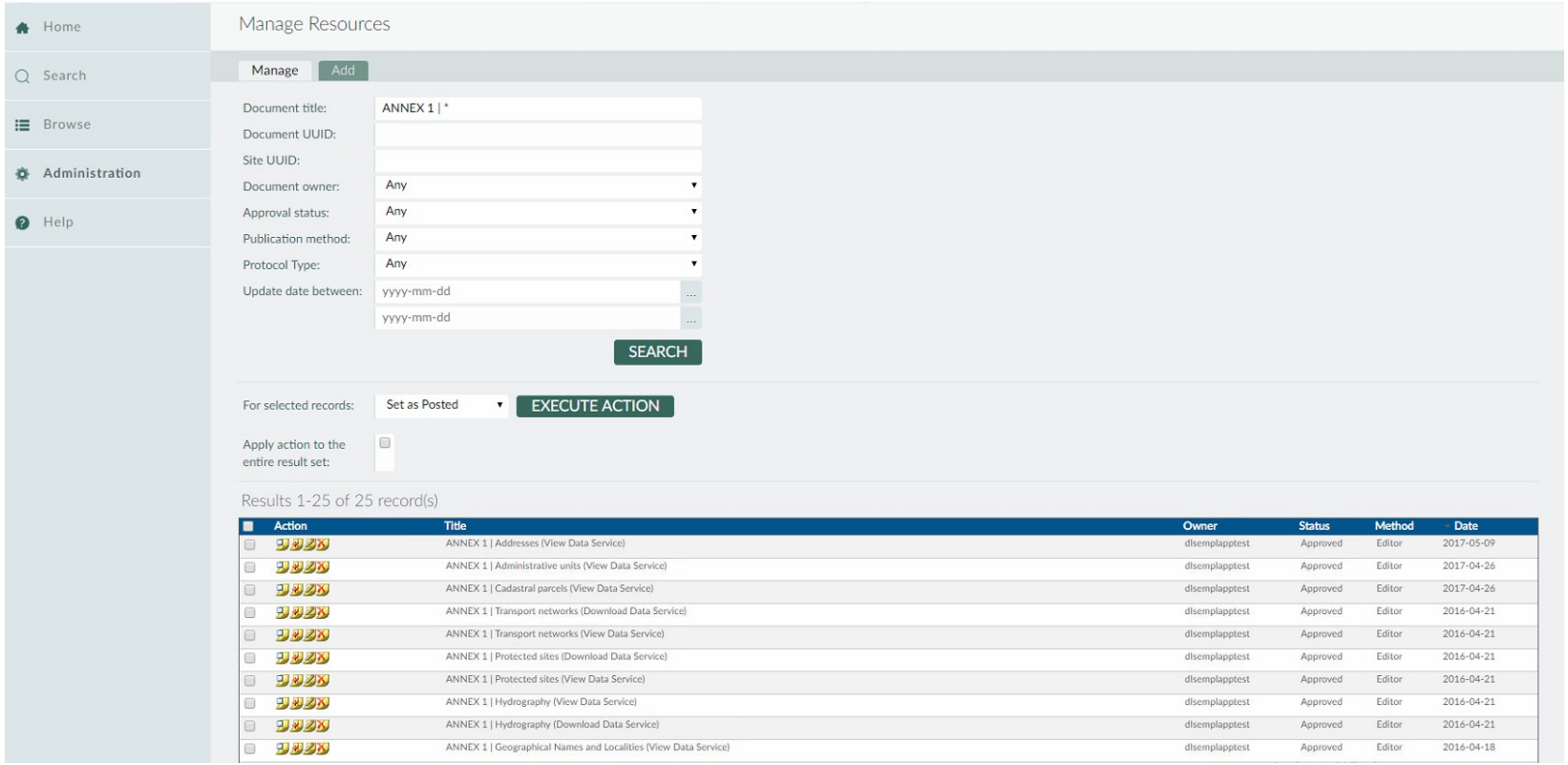
Cyprus INSPIRE Geoportal Backend



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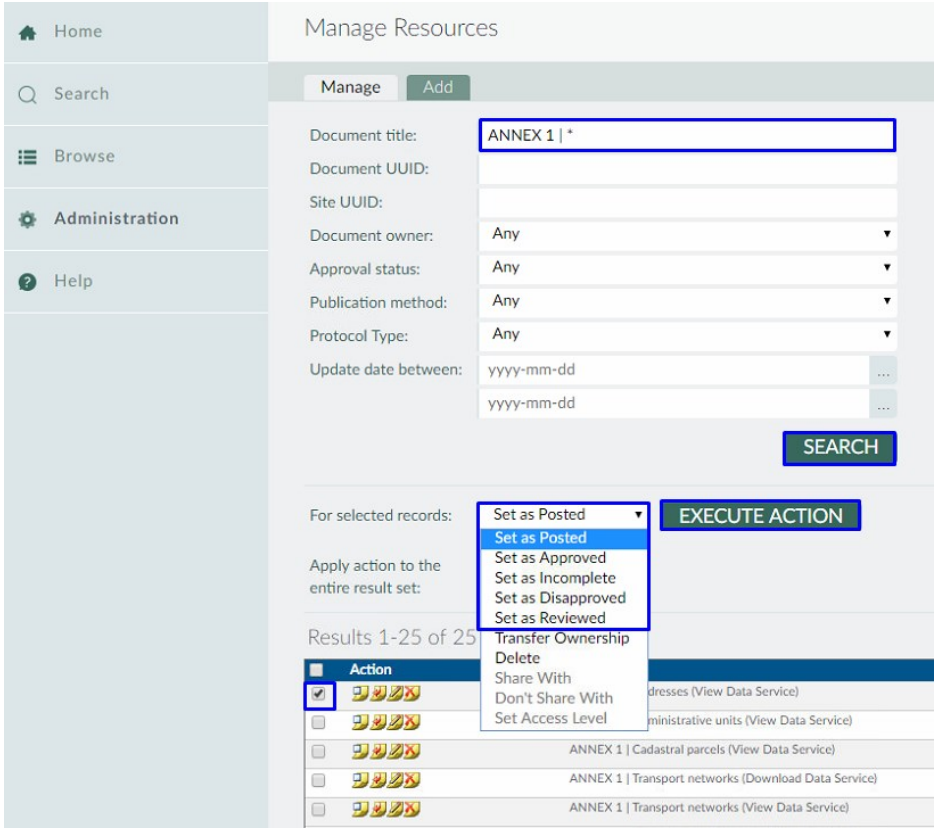

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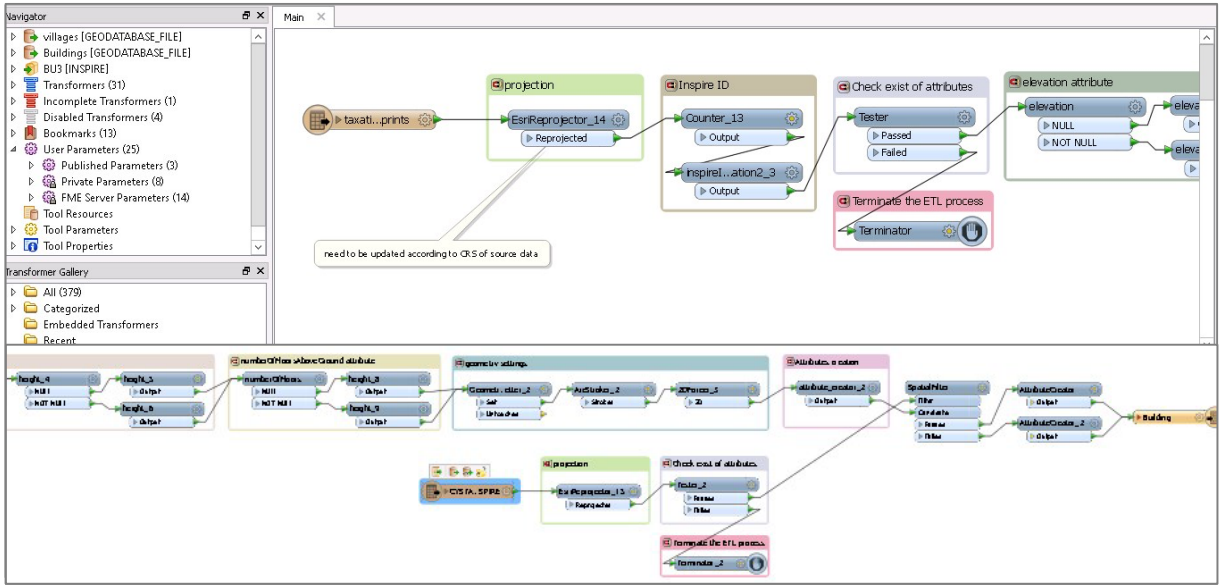
ETL Methodology

ETL Annex I & Annex II – Model Builder

ETL Annex III – Data Interoperability



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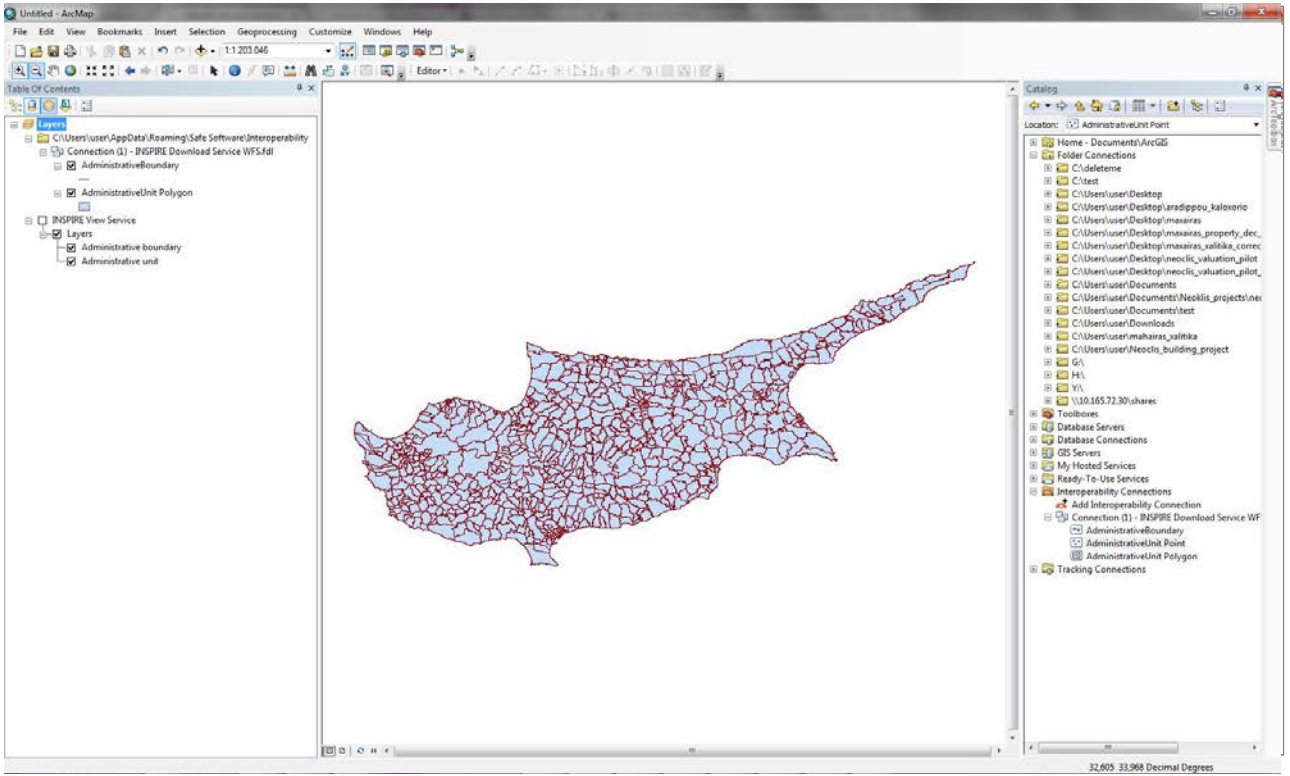
Cyprus INSPIRE Geoportal Quality

WMS Service Connection

WFS Service Connection



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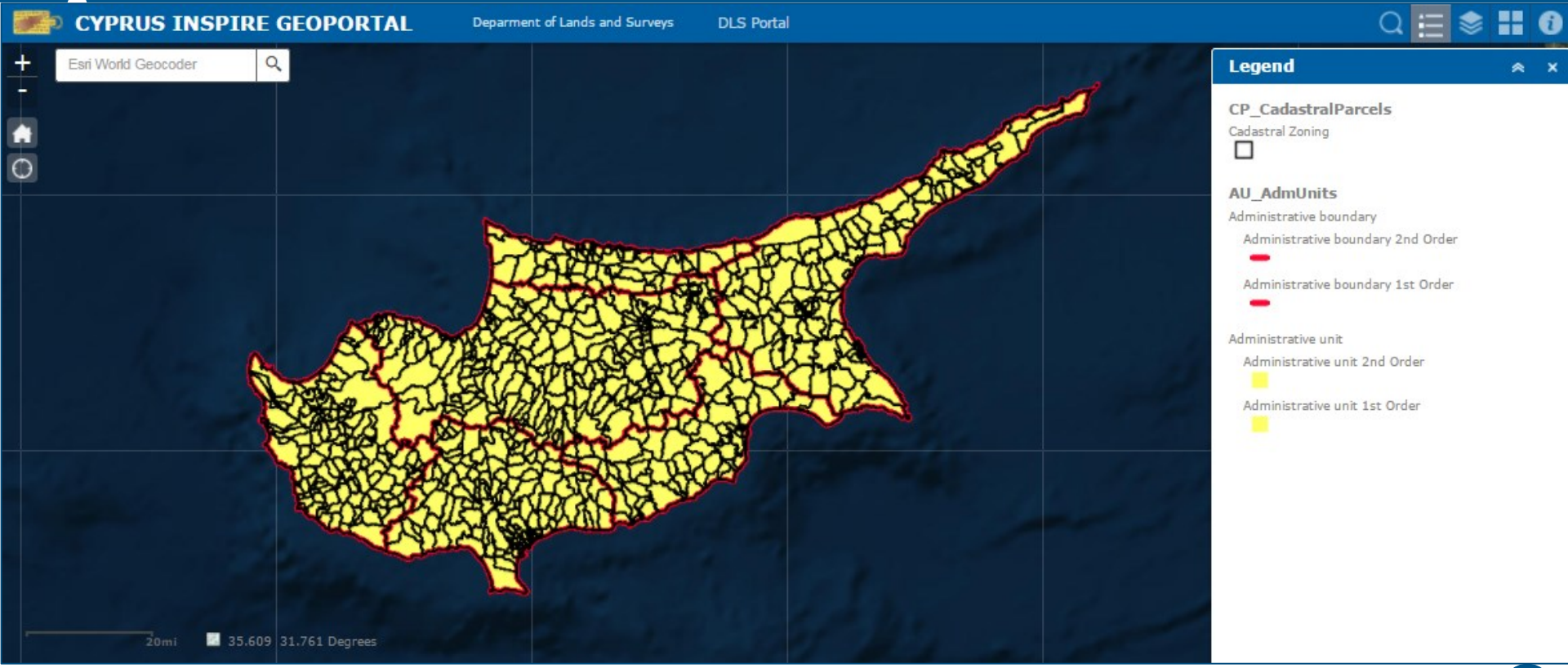
Cyprus INSPIRE Geoportal Quality



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Thank you!

Questions & Answers

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