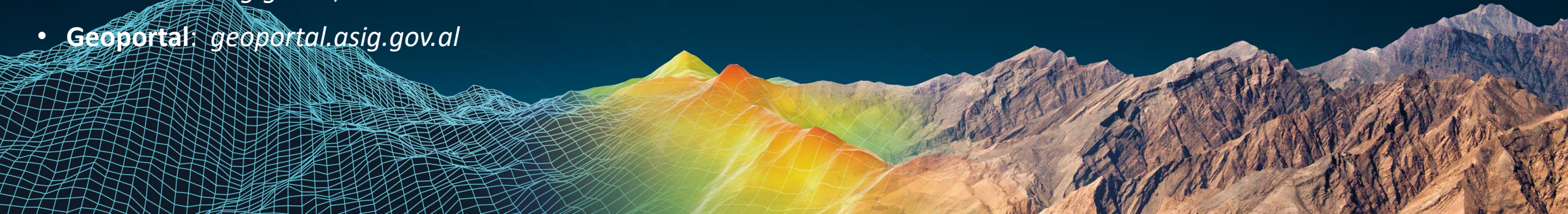




STATE AUTHORITY FOR GEOSPATIAL INFORMATION

Introduction

- Established in **2013**
- **Law 72/2012** “*On the Organization and Operation of the National Spatial Data Infrastructure in the Republic of Albania*”
- DCM No. 402, dated 20.05.2020 Policy document “*For the Governance of the Geospatial Information Sector in Albania, 2020-2030*”
- Subordinate under **Prime Ministry’s Office**
- **Staff:** 73 Person (Geodesy/ Geoinformatics/ IT)
- **Finance:** State Budget / Donations
- **Address:** Papa Gjon pali II" street, nr. 3, 2nd floor, Tirana
- **Website:** asig.gov.al;
- **Geoportal:** geoportal.asig.gov.al



Mission: To manage the establishment and continuous operation of National Spatial Data Infrastructure

Main responsibilities

- Implement the national policy for Geospatial Information Infrastructure
- Create and maintain Geodetic Reference Frame
- Production and maintenance of the National Base Map
- Create standards/rules for the National GIS
- Develop and administrate the National Geoportal
- Centre of Monitoring of Albania territory from Remote Sensing Technology
- Provide education and capacity building in the Geo Information Sector
- Responsible for the creation of NSDI in Albania



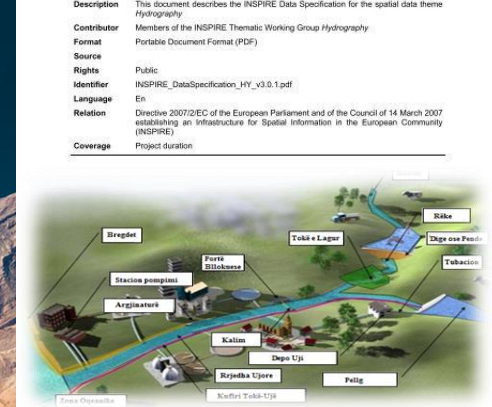
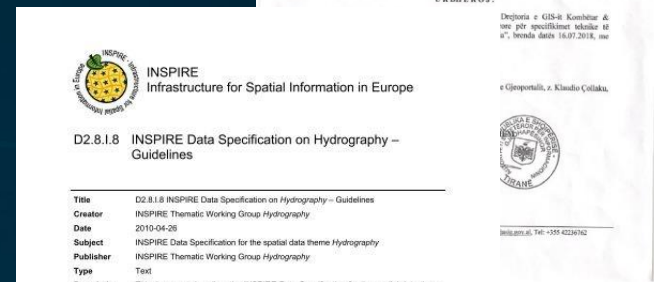
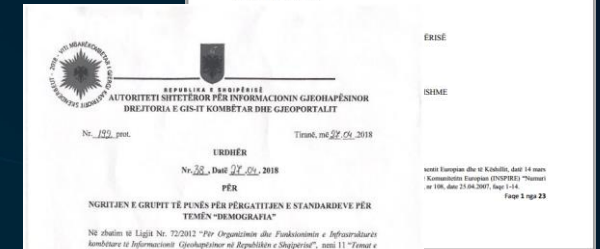
Introduction

- **Law 72/2012** “On the Organization and Operation of the National Spatial Data Infrastructure in the Republic of Albania “

Article 11: Geospatial data themes

Article 16: Determination of uniform standards and rules, including the National GIS standard.

Draft dcm for the creation of National GIS



Standards of geoinformation



❖ Law 72/2012 is transposition of EU Directive “INSPIRE” for NSDI
Approved National Standards regarding Interoperability, Geodetic Reference Frame,
Network Services, Metadata, Geoinformation Data Sharing.

32/34 National Thematic Data Specifications approved as DCM

D2.8.11.2 Data Specification on Land Cover – Technical Guidelines

Title D2.8.11.2 INSPIRE Data Specification on Land Cover – Technical Guidelines
Creator INSPIRE Thematic Working Group Land Cover
Date 2013-12-10
Subject INSPIRE Data Specification for the spatial data theme Land Cover
Publisher European Commission Joint Research Centre
Type Text
Description This document describes the INSPIRE Data Specification for the spatial data theme Land Cover
Contributor Members of the INSPIRE Thematic Working Group Land Cover
Format Portable Document Format (pdf)
Source
Rights Public
Identifier D2.8.11.2_v3.0
Language En
Relation Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (INSPIRE)
Coverage Project duration

Hydrography

Administrative units

Cadastral Parcels

Buildings

Addresses

Geographical Names

Transport Networks

Geology

Elevation

Orthoimagery

KRGJSH

Geographical Grid Systems

Protected Sites

Land Use

Land Cover

Natural Risk Zone

Population Distribution and Demography

Sea Regions

Statistical Units

Mineral Resource

Energy Resource

Utility and Governmental Services

Soil

Imagery Base Map

Production and Industrial Facilities

Agricultural and Aquaculture Facilities

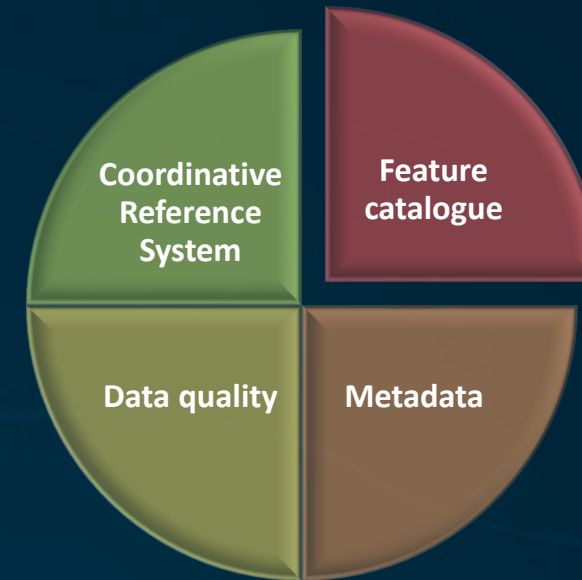
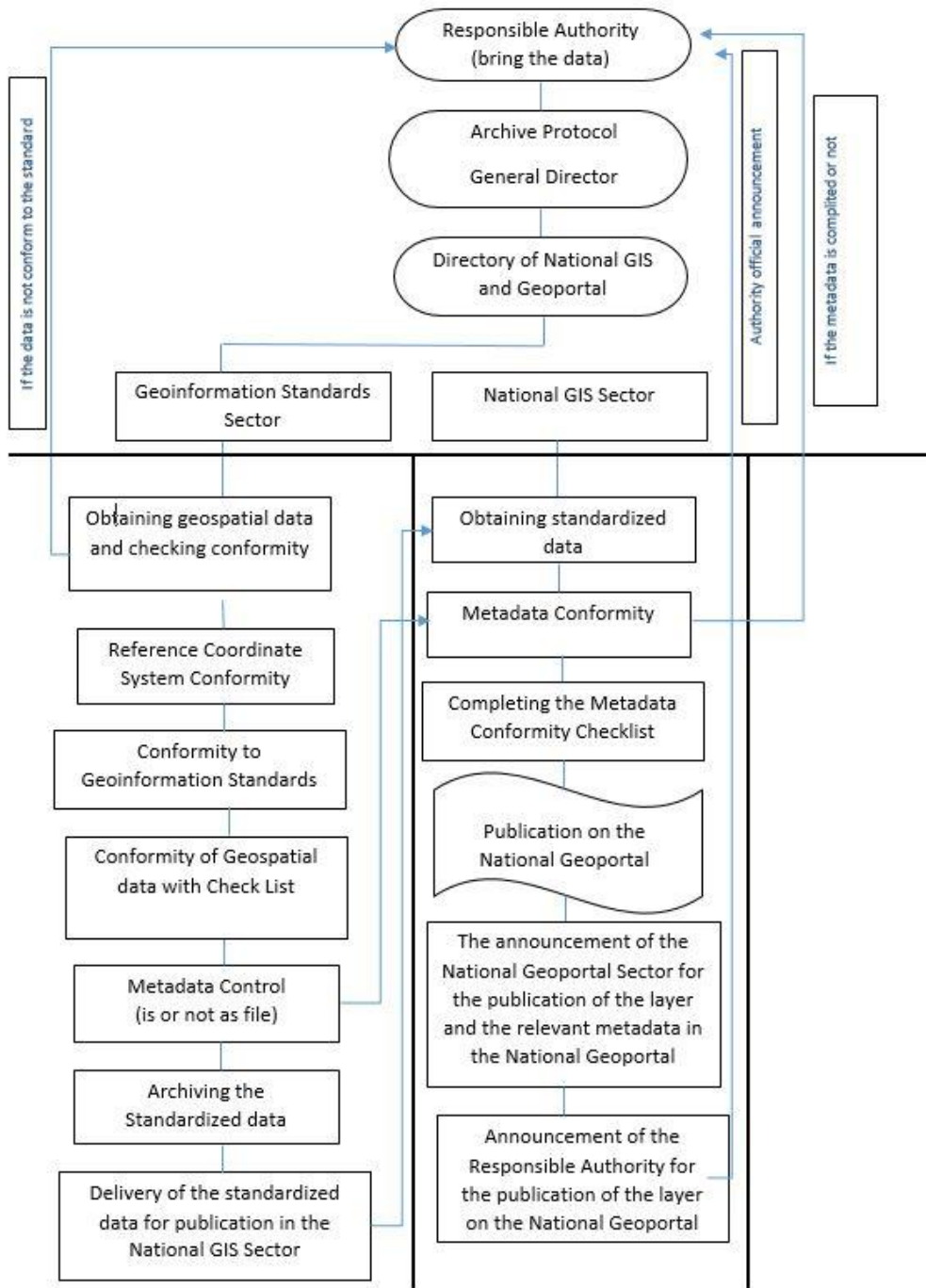
Atmospheric Conditions and Meteorological Geographical features

Hydrology

❖ Public Authority Responsible for Geospatial Themes

❖ Data control according to geoinformation themes.

“Technical guide for the control of data/system of geospatial information and their inclusion in the National GIS”



❖ Control of data quality elements according to geoinformation themes is done manually.

- ✓ 5 elements and 15 sub-elements from the INSPIRE Directive have been defined in order to realise the description of the quality of geospatial data:

1. Completeness	1.1. Commission
	1.2 Omission
2. Logical consistency	2.1 Conceptual consistency
	2.2 Domain consistency
	2.3 Format consistency
	2.4 Topological consistency
3. Positional accuracy	3.1 Absolute or external accuracy
	3.2 Relative or internal accuracy
	3.3 Gridded data position accuracy
4. Thematic accuracy	4.1 Classification correctness
	4.2 Non-quantitative attribute correctness
	4.3 Quantitative attribute accuracy
5. Temporal quality	4.1 Accuracy of a time measurement
	4.2 Temporal consistency
	4.3 Temporal validity

❖ We are creating a manual for Geospatial Data Quality Assessment for the responsible public authorities.

❖ **Predicted controls for each dataset.**

A concrete example is taken from the control of data for the creation of the standard “Base Map”.

Theme	Completeness		Logical Consistency				Positional Accuracy			Thematic Accuracy			Temporal Accuracy		Usability	
	Excess(Commission)	Omission	Conceptual Consistency	Domain Consistency	Format Consistency	Topological Consistency	Absolute Exterior Accuracy	Relative or Interior Accuracy	Gridded Data Position Accuracy	Classification Correctness	Non Quantitative Attribute Correctness	Quantitative Attribute Accuracy	Accuracy of a Time Measurement	Temporal Consistency	Temporal Validity	Usability
GN	X	X	X	X	X	-	-	-	-	X	X	-	-	-	-	-
AU	X	X	X	X	X	X	-	-	-	X	X	-	-	-	-	-
TN	X	X	X	X	X	X	X	-	-	X	X	-	-	-	-	-
HY	X	X	X	X	X	X	X	-	-	X	X	-	-	-	-	-
PS	X	X	X	X	X	-	-	-	-	X	X	-	-	-	-	-
EL	X	X	X	X	X	-	-	-	-	X	X	-	-	-	-	-
LC	X	X	X	X	X	-	-	-	-	X	X	-	-	-	-	-
GE	X	X	X	X	X	-	-	-	-	X	X	-	-	-	-	-
BU	X	X	X	X	X	-	-	-	-	X	X	-	-	-	-	-
US	X	X	X	X	X	X	-	-	-	X	X	-	-	-	-	-
PF	X	X	X	X	X	-	-	-	-	X	X	-	-	-	-	-
AF	X	X	X	X	X	-	-	-	-	X	X	-	-	-	-	-
AS	X	X	X	X	X	-	-	-	-	X	X	-	-	-	-	-

State Authority for Geospatial Information in Albania

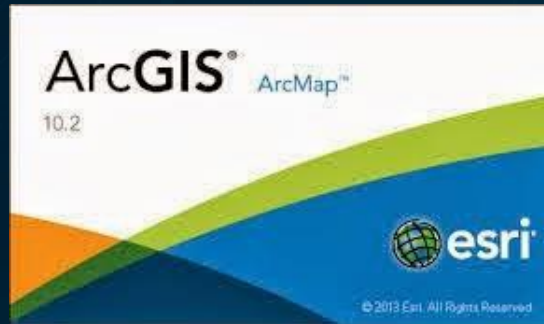
The software we use for the control of data quality:

HALE:

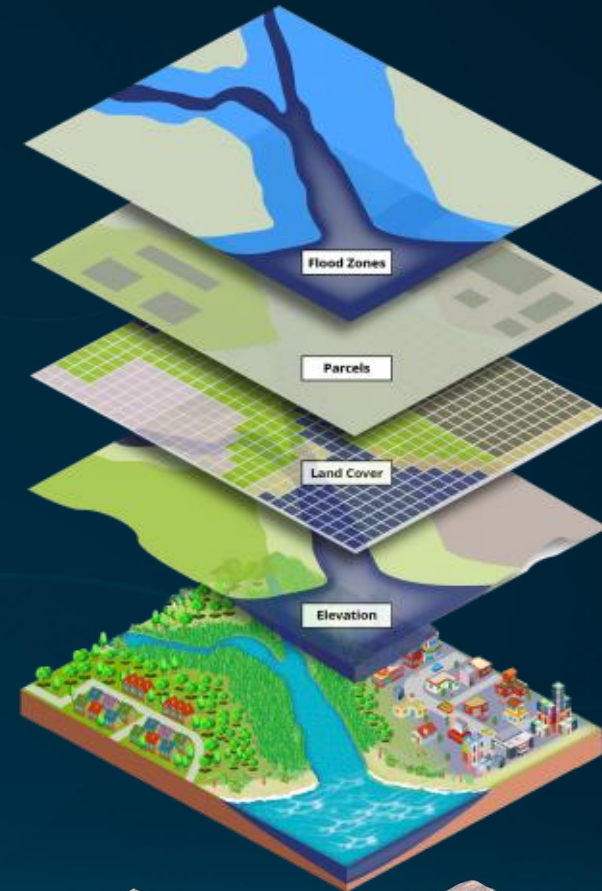


<http://community.esdi-humboldt.eu/projects/hale/files>

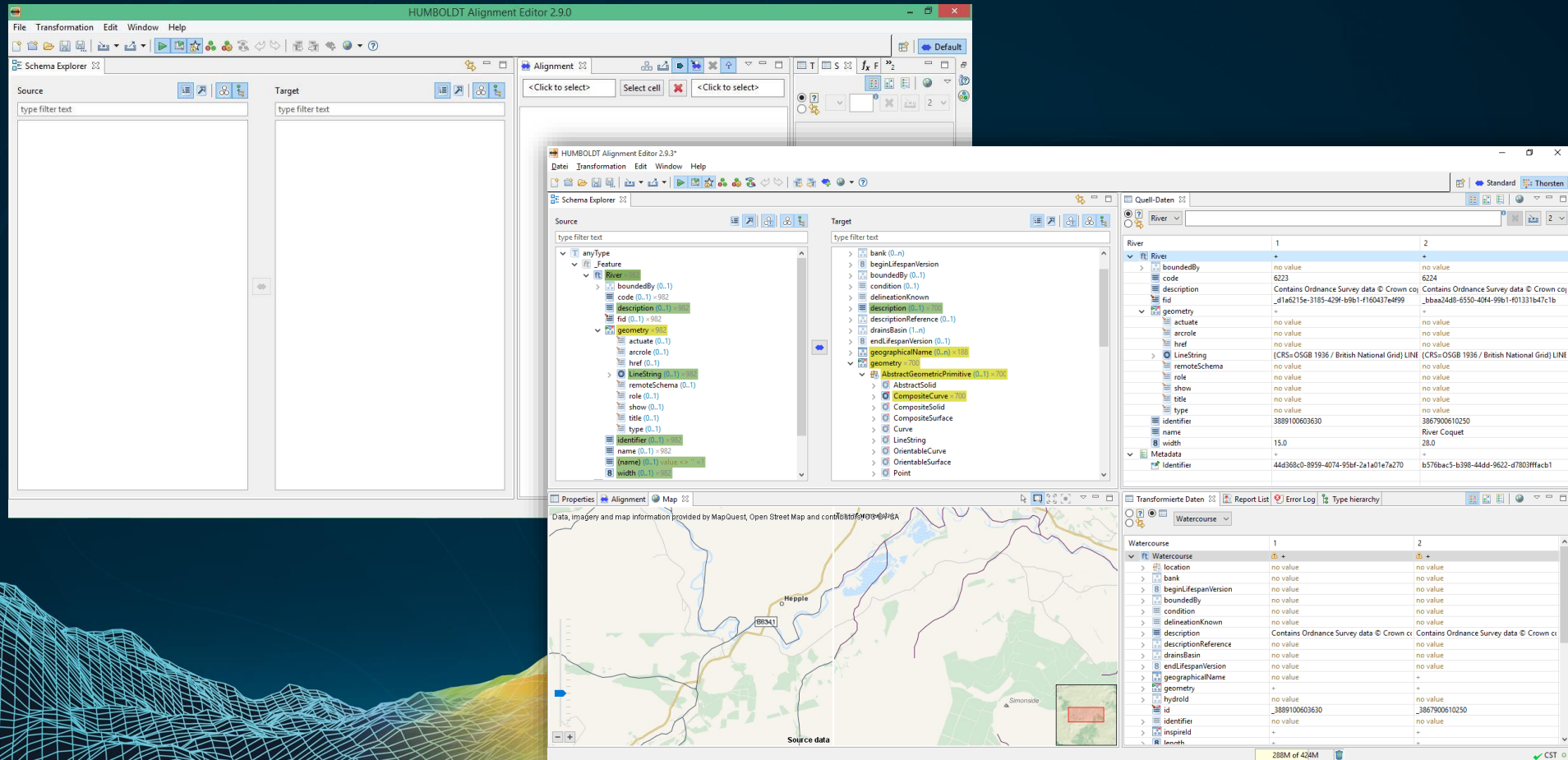
Esri:



<http://www.qgis.org>



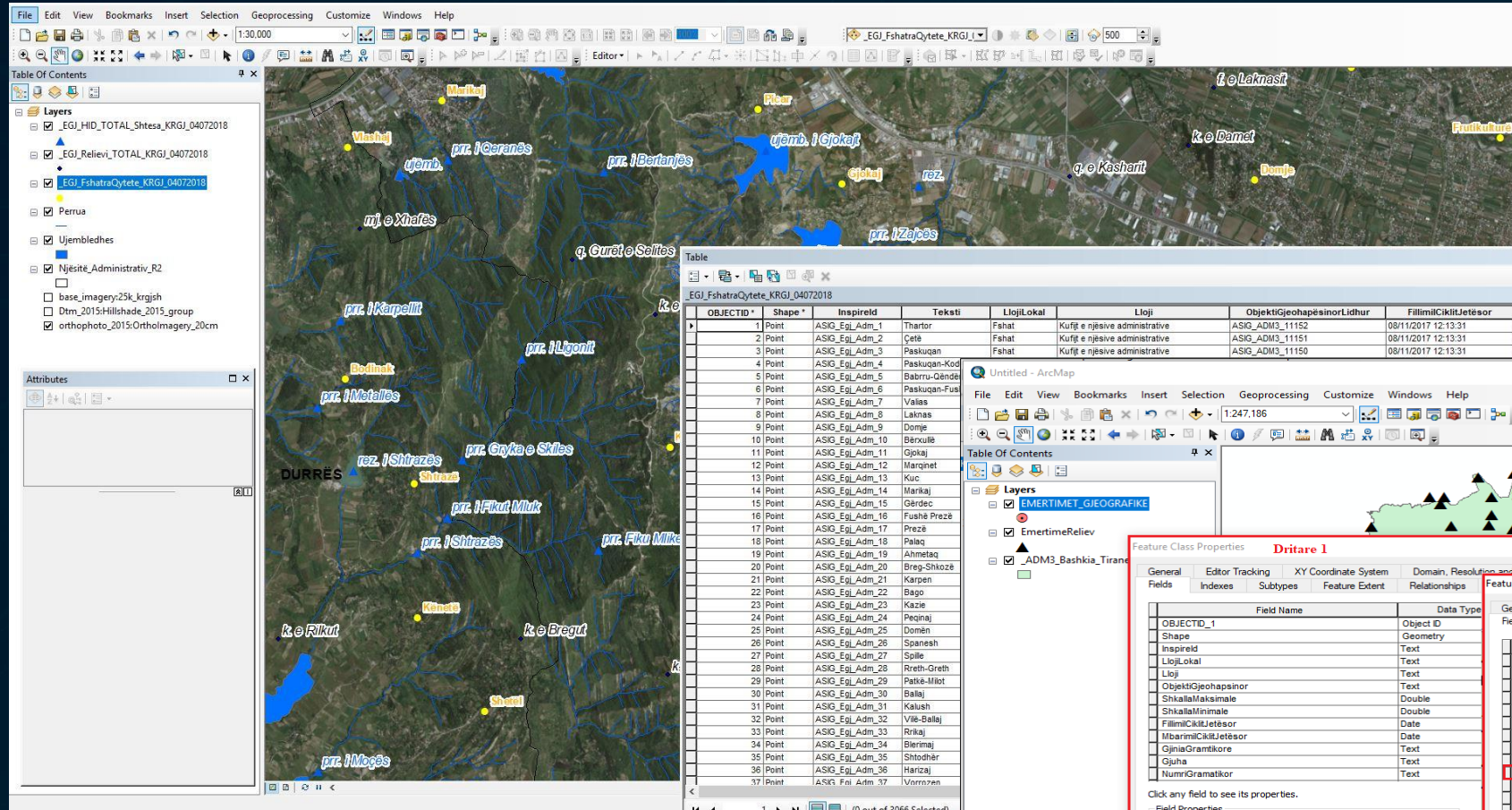
Open Source: <http://community.esdi-humboldt.eu/projects/hale/files>



The screenshot displays the HUMBOLDT Alignment Editor 2.9.0 interface. It features a 'Schema Explorer' on the left with 'Source' and 'Target' panels for mapping schemas. The 'Source' panel shows a tree structure for a 'River' feature, including properties like 'boundedBy', 'description', 'geometry', and 'actuate'. The 'Target' panel shows a similar structure for a 'Watercourse' feature. Below the schema explorer is a map view showing a river network with a red box indicating the 'Source data' location. On the right side, there are two data tables: 'Quell-Daten' (Source Data) and 'Transformierte Daten' (Transformed Data). The 'Quell-Daten' table lists attributes for a 'River' feature, and the 'Transformierte Daten' table lists attributes for a 'Watercourse' feature. The status bar at the bottom indicates '288M of 424M' and 'CST'.

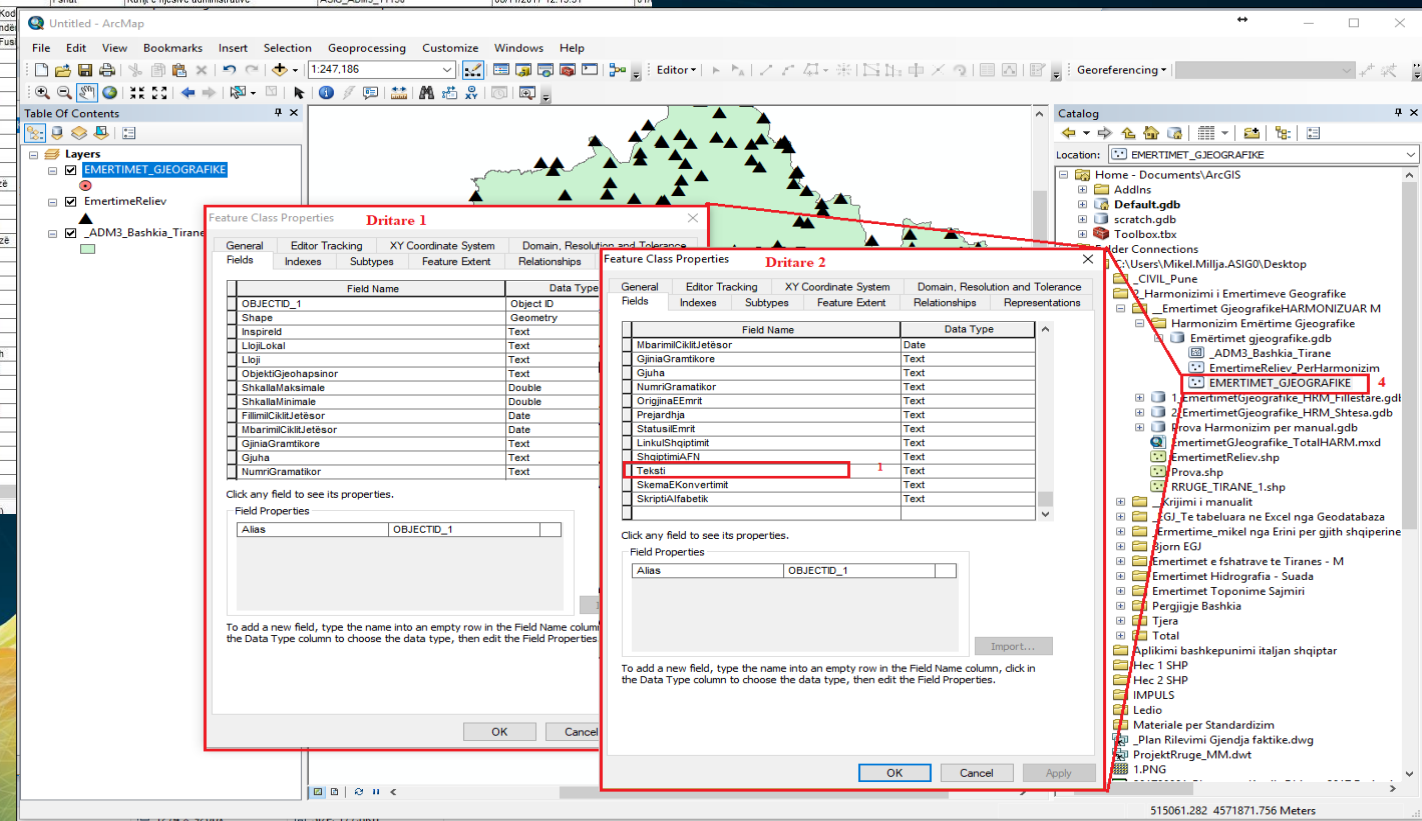
River	1	2
ft	+	+
boundedBy	no value	no value
code	6223	6224
description	Contains Ordnance Survey data © Crown co	Contains Ordnance Survey data © Crown co
fid	d1a6215e-3185-429f-b9b1-f160437e4f99	bbaa24d8-6550-4204-99b1-f01331b47c1b
geometry	+	+
actuate	no value	no value
arcrole	no value	no value
href	no value	no value
remoteSchema	no value	no value
show	no value	no value
title	no value	no value
type	no value	no value
LineString	[CRS=OSGB 1936 / British National Grid] LINE	[CRS=OSGB 1936 / British National Grid] LINE
role	no value	no value
name	3889100603630	3867900610250
name	no value	River Coquet
width	15.0	28.0
Metadata	+	+
Identifier	44d388c0-8959-4074-95bf-2a1a01e7a270	b576bac5-b398-446d-9622-d7803ffac61

Watercourse	1	2
ft	+	+
Watercourse	+	+
location	no value	no value
bank	no value	no value
beginLifespanVersion	no value	no value
boundedBy	no value	no value
condition	no value	no value
delineationKnown	no value	no value
description	Contains Ordnance Survey data © Crown c	Contains Ordnance Survey data © Crown c
descriptionReference	no value	no value
drainsBasin	no value	no value
endLifespanVersion	no value	no value
geographicalName	no value	no value
geometry	no value	no value
hydroid	no value	no value
id	3889100603630	3867900610250
Identifiers	no value	no value
Inspired	+	+
length	+	+



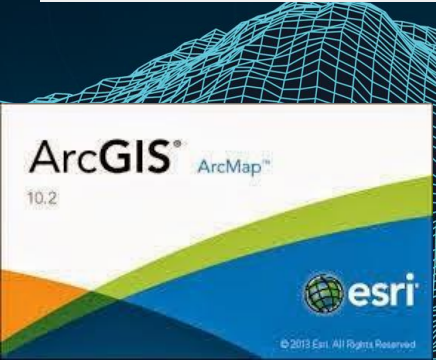
The screenshot shows the ArcGIS Desktop interface with a map of Durres, Albania. The map displays various administrative boundaries and features. A data table is open, showing the following data:

OBJECTID	Shape	Inspired	Teksti	LlojiLokal	Lloji	ObjektiGjeohapësinorLidhur	FillimiCiklitJetesor
1	Point	ASIG_Egl_Adm_1	Thartor	Fshat	Kufij e njësive administrative	ASIG_ADM3_11152	08/11/2017 12:13:31
2	Point	ASIG_Egl_Adm_2	Çetë	Fshat	Kufij e njësive administrative	ASIG_ADM3_11151	08/11/2017 12:13:31
3	Point	ASIG_Egl_Adm_3	Paskuqan	Fshat	Kufij e njësive administrative	ASIG_ADM3_11150	08/11/2017 12:13:31
4	Point	ASIG_Egl_Adm_4	Paskuqan-Kod				
5	Point	ASIG_Egl_Adm_5	Batrru-Qëndre				
6	Point	ASIG_Egl_Adm_6	Paskuqan-Fush				
7	Point	ASIG_Egl_Adm_7	Vatës				
8	Point	ASIG_Egl_Adm_8	Laknas				
9	Point	ASIG_Egl_Adm_9	Domje				
10	Point	ASIG_Egl_Adm_10	Bërxullë				
11	Point	ASIG_Egl_Adm_11	Gjokaj				
12	Point	ASIG_Egl_Adm_12	Marqnet				
13	Point	ASIG_Egl_Adm_13	Kuç				
14	Point	ASIG_Egl_Adm_14	Manikaj				
15	Point	ASIG_Egl_Adm_15	Gërdës				
16	Point	ASIG_Egl_Adm_16	Fushë Prezë				
17	Point	ASIG_Egl_Adm_17	Prezë				
18	Point	ASIG_Egl_Adm_18	Palaj				
19	Point	ASIG_Egl_Adm_19	Ahmetaq				
20	Point	ASIG_Egl_Adm_20	Breg-Shkozë				
21	Point	ASIG_Egl_Adm_21	Karpen				
22	Point	ASIG_Egl_Adm_22	Bago				
23	Point	ASIG_Egl_Adm_23	Kazie				
24	Point	ASIG_Egl_Adm_24	Pesinaj				
25	Point	ASIG_Egl_Adm_25	Domën				
26	Point	ASIG_Egl_Adm_26	Spanesh				
27	Point	ASIG_Egl_Adm_27	Spilë				
28	Point	ASIG_Egl_Adm_28	Rreth-Greth				
29	Point	ASIG_Egl_Adm_29	Patka-Milot				
30	Point	ASIG_Egl_Adm_30	Ballaj				
31	Point	ASIG_Egl_Adm_31	Kalush				
32	Point	ASIG_Egl_Adm_32	Vllë-Ballaj				
33	Point	ASIG_Egl_Adm_33	Rinaj				
34	Point	ASIG_Egl_Adm_34	Bierimaj				
35	Point	ASIG_Egl_Adm_35	Shodhar				
36	Point	ASIG_Egl_Adm_36	Harizaj				
37	Point	ASIG_Fel_Adm_37	Vorrozaj				



The screenshot shows two 'Feature Class Properties' dialog boxes for 'Dritare 1' and 'Dritare 2'. Both dialog boxes have the 'Fields' tab selected, showing a table of fields with their names and data types.

Field Name	Data Type
OBJECTID_1	Object ID
Shape	Geometry
Inspired	Text
LlojiLokal	Text
Lloji	Text
ObjektiGjeohapësinor	Text
ShkallaMaksimale	Double
ShkallaMinimale	Double
FillimiCiklitJetesor	Date
MbarimiCiklitJetesor	Date
ShtetistimiAFN	Text
Gjuha	Text
NumriGramatikor	Text
Telati	Text
SkemaEkonvertimit	Text
SkriptiAlfabetik	Text



Geographic information system (GIS) is a system that collects, stores, analyses, processes and presents data related to a natural or social phenomenon, the georeferencing is enabled by a common coordinate reference system.

The National GIS system will integrate all data and geographic information systems that will be built for specific topics by responsible public authorities. The system will ensure the interoperability and access of geoinformation by implementing some of mandatory rules and standards by the responsible public authorities.

Geographic information systems (GIS) integrates five key components:

1. Hardware
2. Software
3. Geospatial information
4. GIS experts
5. Methodology



DATA AND SYSTEMS THAT WILL BE INCLUDED IN NATIONAL GIS

- ❖ The geospatial information data and systems that will be included in National GIS would be according to the requirements of this standard as well as the specific requirements of the thematic standards, for all the topics provided for in point 2, article 11, to law no. 72/2012.

 Hydrography	 KRGJSH	 Mineral Resource
 Administrative units	 Geographical Grid Systems	 Energy Resource
 Cadastral Parcels	 Protected Sites	 Utility and Governmental Services
 Buildings	 Land Use	 Soil
 Addresses	 Land Cover	 Imagery Base Map
 Geographical Names	 Natural Risk Zone	 Production and Industrial Facilities
 Transport Networks	 Population Distribution and Demography	 Agricultural and Aquaculture Facilities
 Geology	 Sea Regions	 Atmospheric Conditions and Meteorological Geographical features
 Elevation	 Statistical Units	 Hydrology
 Orthoimagery		

- ❖ Based on the “**Technical guide for the control of data/system of geospatial information and their inclusion in the National GIS**”, data quality is realized and declared by the relevant responsible public authorities that brings the data. The control consists in the element and sub-element data quality as well as data measurement quality, which should be used to evaluate and document the data quality for groups related to the geospatial data of each topic.

NATIONAL GIS COMPONENT MODULES

❖ The modules of National GIS:

1. Online Maps

2. WebGIS

3. Metadata

4. Network services

5. Archive

6. Conformity

- ✓ Semi - Automatic control of the data quality
- ✓ Accuracy declared by Responsible Public Authorities



The responsible public authorities upload the geospatial data to the conformity module, physically or through network services.

The purpose of the conformity module is to realize the technical control of data/geospatial information systems made available by the public authorities responsible for approving/rejecting their inclusion in the National GIS.

- The control of the geospatial data consists in the control of the conformity of the data according to the geoinformation standards approved for each topic with DCM.
- State Authority of Geospatial Information (ASIG), within 3 months from the approval of the National GIS Standard, drafts and approves the Technical Guide for conformity control.

Control of data conformity

- Coordinative Reference System
- Feature catalogue
- Metadata

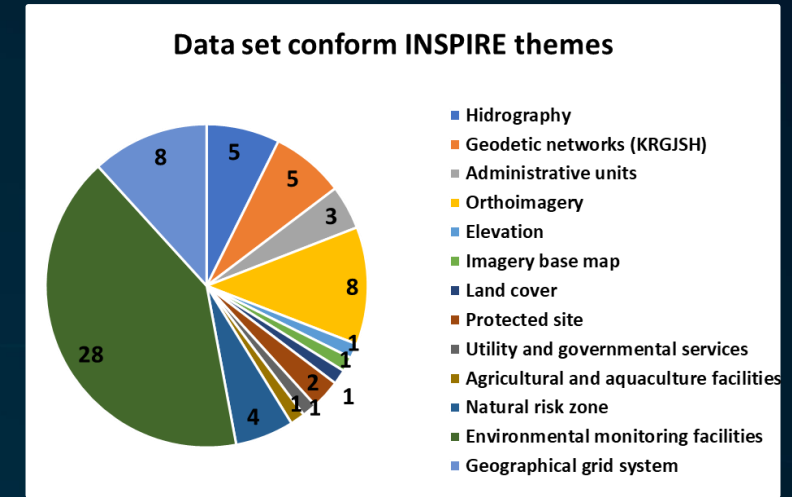
Control of Network Services Conformity

- GetMap
- GetInfo
- GetCapabilities
- Coordinative system

Data quality is realized and declared by the relevant responsible public authorities that brings the data

FUTURE NEEDS

- ❖ Technical evaluation of main NSDI data sets quality in Albania. Referring to INSPIRE directive data specification.
- ❖ Defining workflow for harmonization of Datasets conform to the Standards.
- ❖ How to deal with modeling, development and maintaining of central NSDI Geospatial Database.
- ❖ Support on Software solution for centralize & local data harmonization.
- ❖ Raising human capacities for the Albanian NSDI Sector regarding Data Quality, Data Harmonization & Data improvement.



12 Themes (92 Layers) conform to DCM



THANK YOU!

asig.gov.al

geoportal.asig.gov.al

