



This project is financed by
the European Union and the Republic of Turkey

National Programme for Turkey 2010 – Instrument for Pre-Accession Assistance

INSPIRING Geospatial Framework For Local Administrations

Ali Toksoy, **Onur Lenk**, Hüseyin Bayraktar, Mahir Güney, Erkan Tın,
Yıldırım Bayar, Yasemin KOÇ



FIG
2018
ISTANBUL

06-11 MAY 2018
EMBRACING OUR SMART WORLD
WHERE THE CONTINENTS CONNECT:
ENHANCING THE GEOSPATIAL
MATURITY OF SOCIETIES



1994





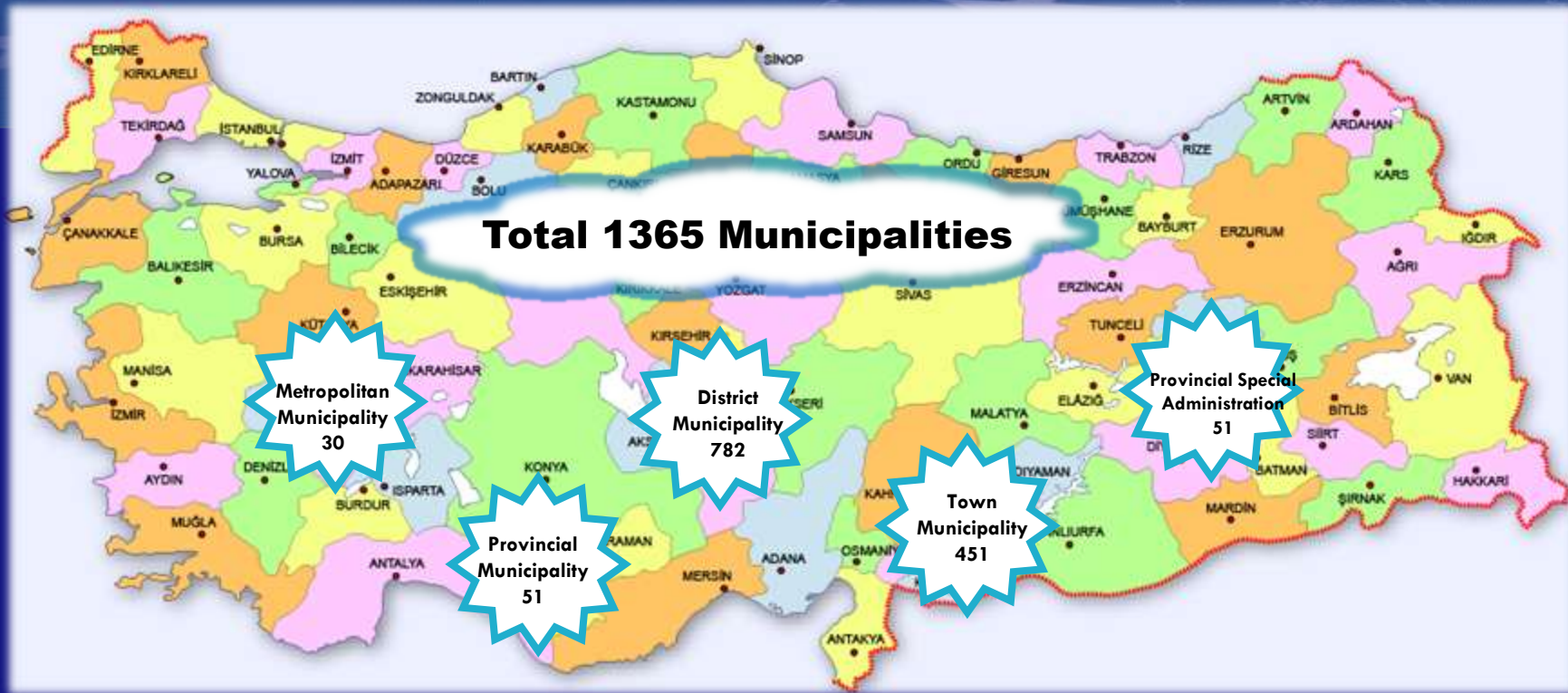
Outline

- **Rationale and Context**
- **Components of Geospatial Framework**
- **Achievements**





Driving force is the Local Administrations..





Motivation



All municipalities are the main resources and users of spatial data in INSPIRE context

They may have deficiency in financial and human resources which cause delays for establishing appropriate geospatial infrastructure





Challenges for Local Administrations

- ❖ Each municipality must make its own IT investment (i.e. servers, software packages, database etc.), and
 - ❖ Train its own staff
 - ❖ Provide 'standard spatial data' through 'standardized services' for other stakeholders
- ✓ *...feasibility and cost-benefit considerations shall be taken into account in the development of the implementing rules (INSPIRE D. Article 7 (1))*
 - ✓ *...public authorities are given the technical possibility to link their spatial data sets and services to the network ...where spatial datasets and services comply with implementing rules with regard, in particular, to metadata, network services and interoperability (INSPIRE D. Article 7 ,11 (1),12..)*

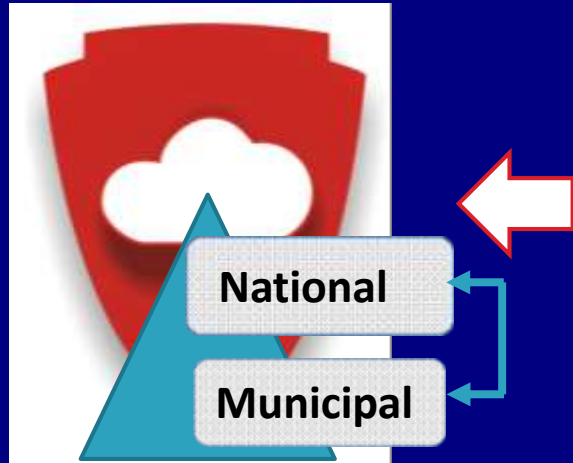




Solution

- ❖ Ministry of Environment and Urbanization (MoEU) aimed to provide appropriate infrastructure to develop and maintain geospatial elements through cloud system..

- ✓ On-demand self service,
- ✓ Broad network access,
- ✓ Resource pooling,
- ✓ Rapid elasticity,
- ✓ Measured service.



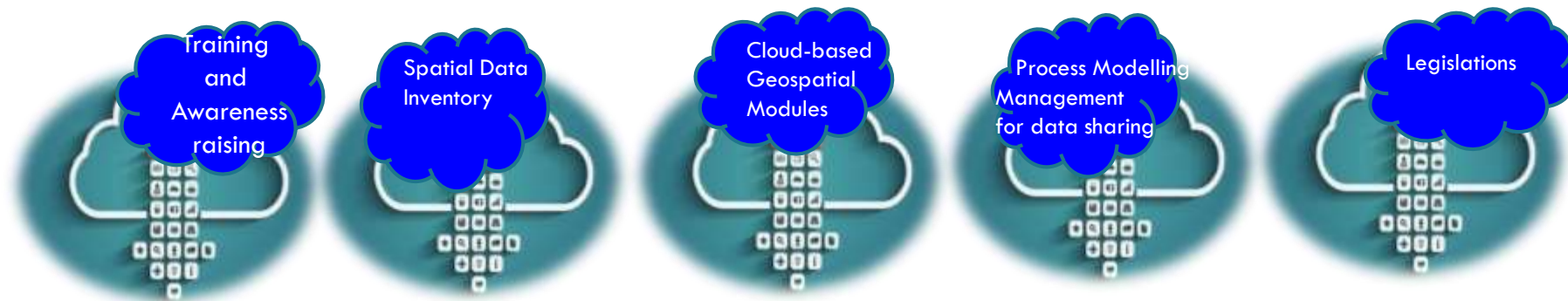
- Data Security
- System Security
- Interoperability
- Cost Saving
- Standard Data
- High Performance
- Extendable System
- Effective Human Resource



Components and Expected Results



This project is financed by the European Union and the Republic of Turkey.



Results to be Achieved



MoEU has increased its own and other relevant institutions' capacity for future implementation of the INSPIRE Directive.



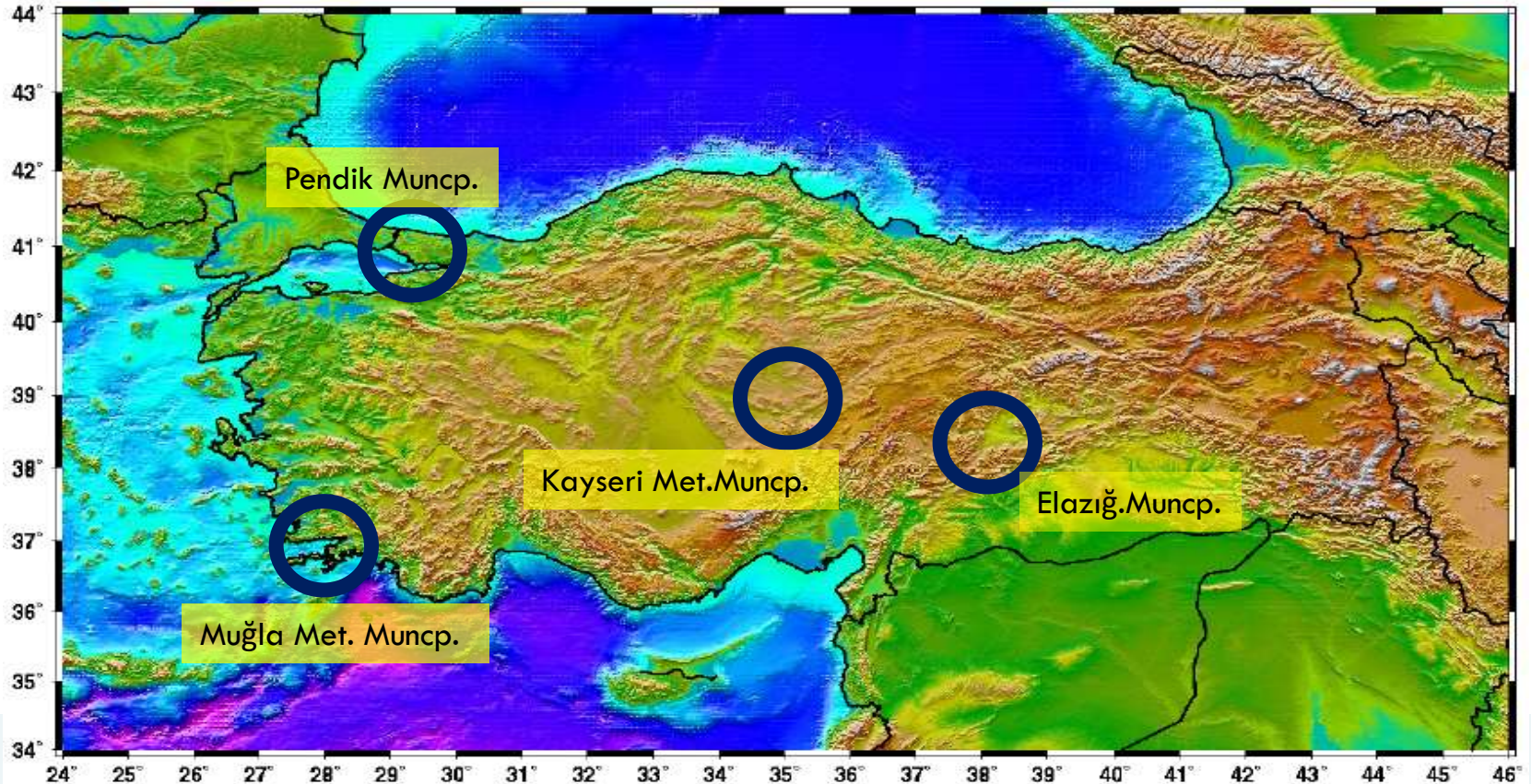
Raised awareness for related stakeholders and decision makers.



More environmentally friendly land planning has developed in line with the EU spatial planning approach



Pilot Areas for Spatial Data Inventory





Data Assessment in Pilot Areas

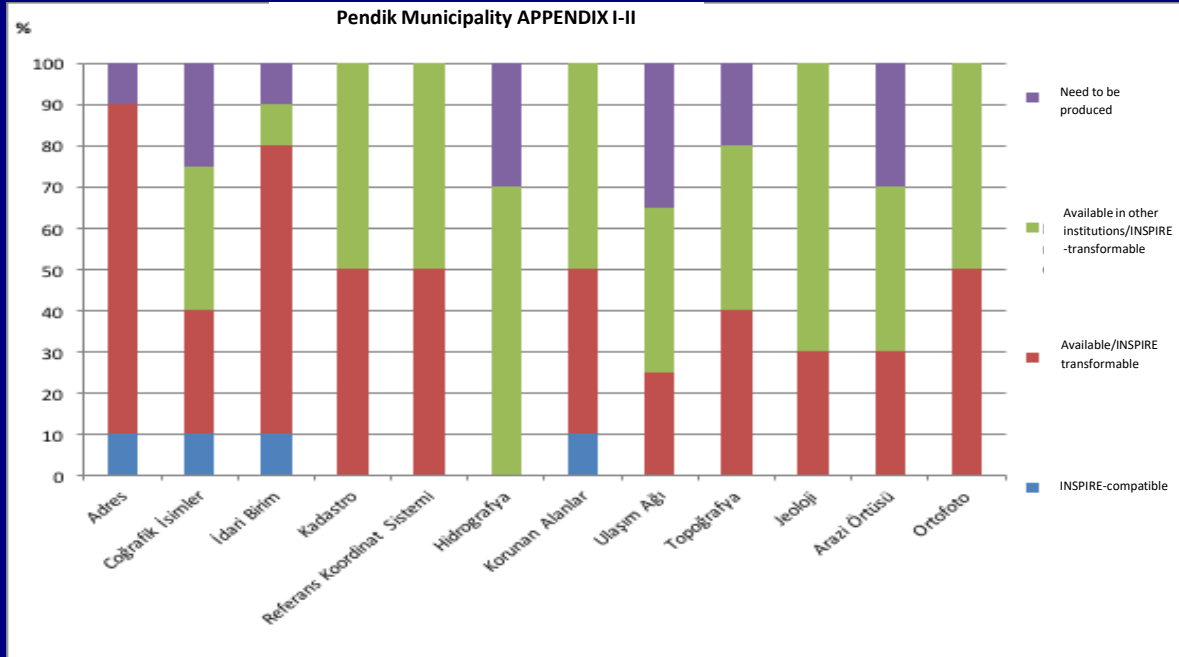
- ❖ Almost each municipality has data sets that correspond to data themes such as administrative unit, address, cadaster parcel, transportation, topography, reference systems, protected sites, transportation networks, buildings and land use as internal parts of their local GIS/UIS projects.
- ❖ In this context, it is possible to produce and transform the data sets to INSPIRE standard at levels to fulfill basic and compulsory types of details and attributes.

Local Government	Data Availability	INSPIRE	
		Compatible Data	Transformable Data
Kayseri Metropolitan Municipality and Talas Sub-Provincial Municipality	55 %	7 %	48 %
İstanbul- Pendik Sub-Provincial Municipality	59 %	9 %	50%
Elazığ Municipality	45 %	4%	41%
Muğla Metropolitan Municipality	49 %	5%	44%



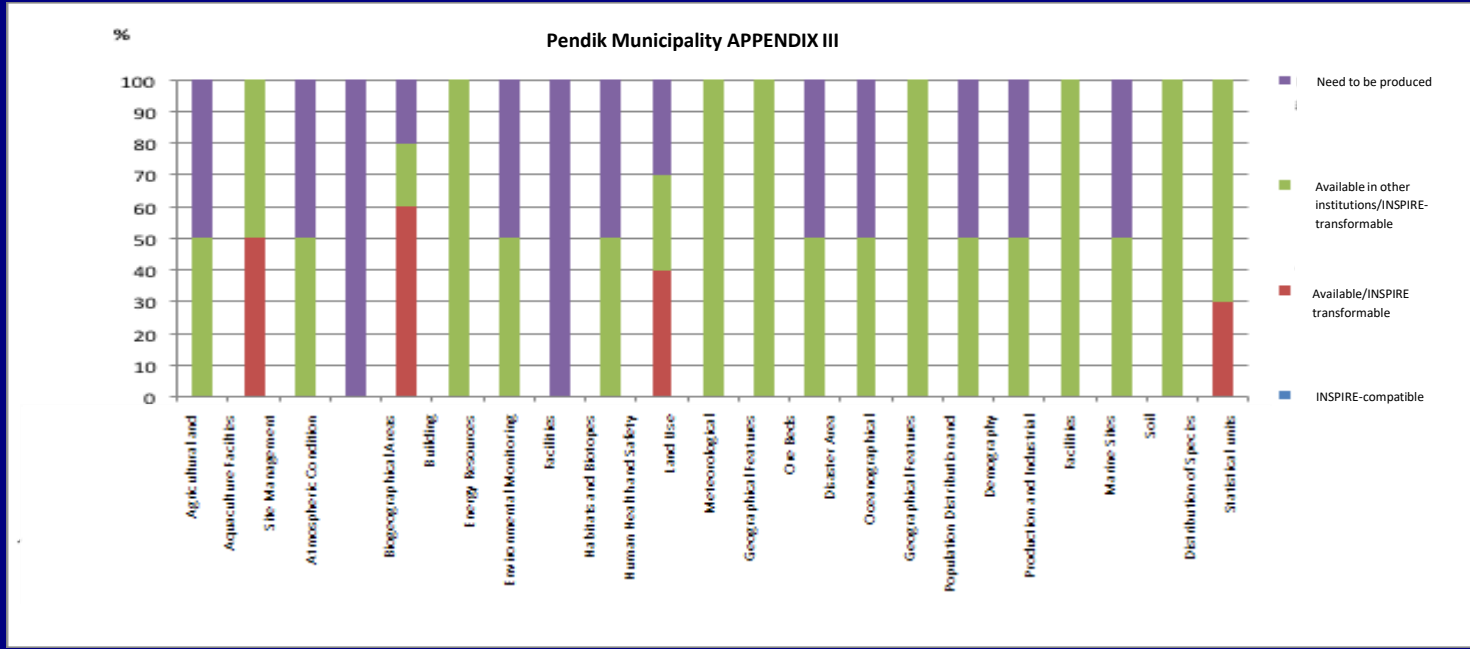


Data Assessment in Pilot Areas



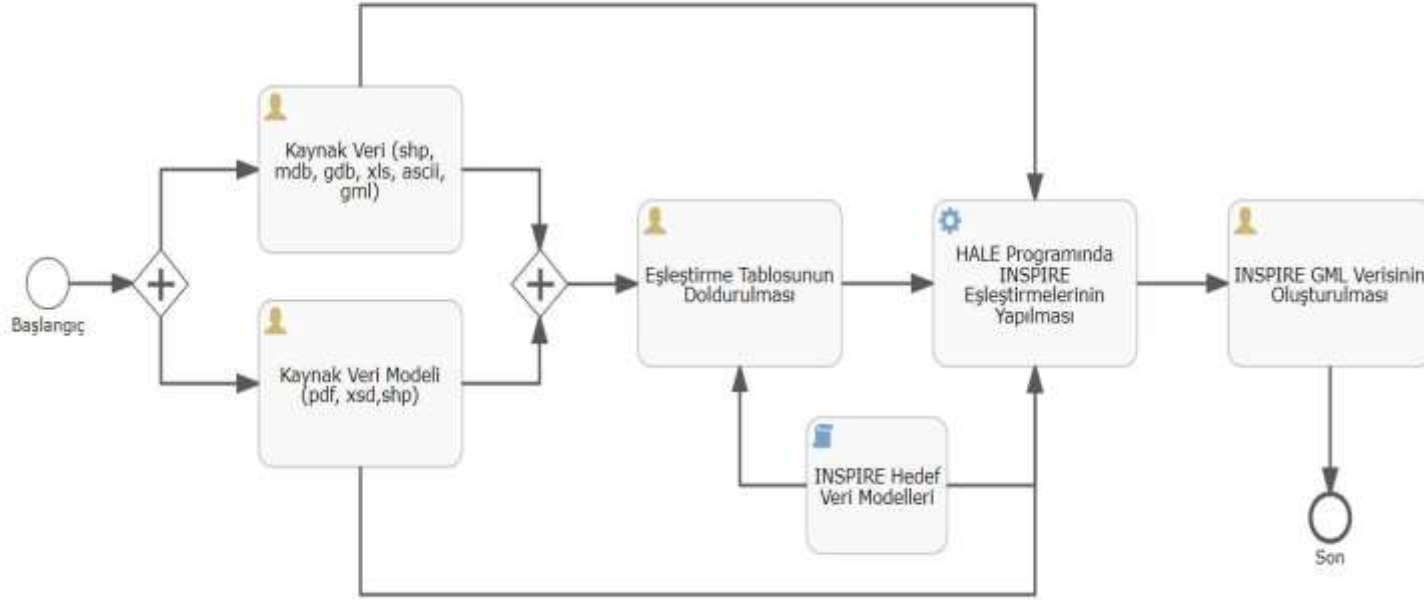


Data Assessment in Pilot Areas





Formation of INSPIRE GMLs



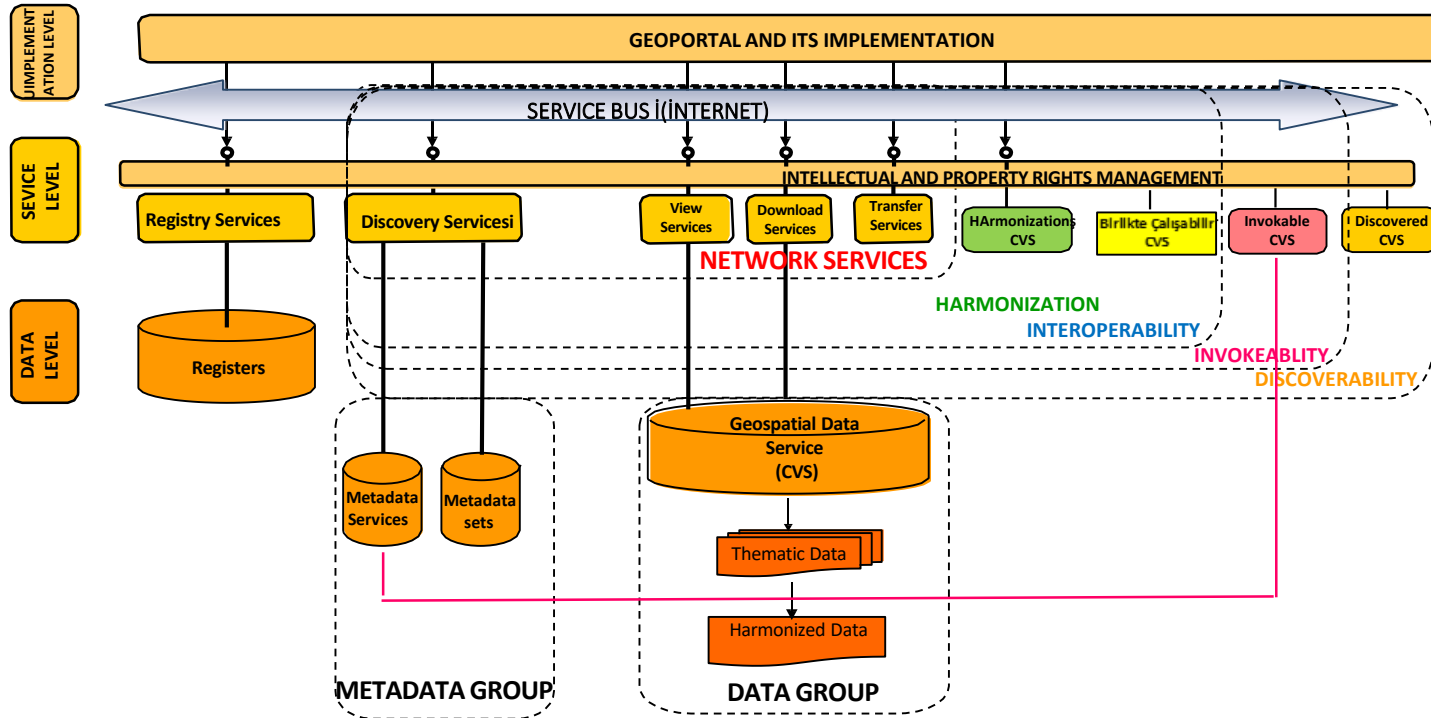
Visited about 50
Data Stakeholder
Public organizations

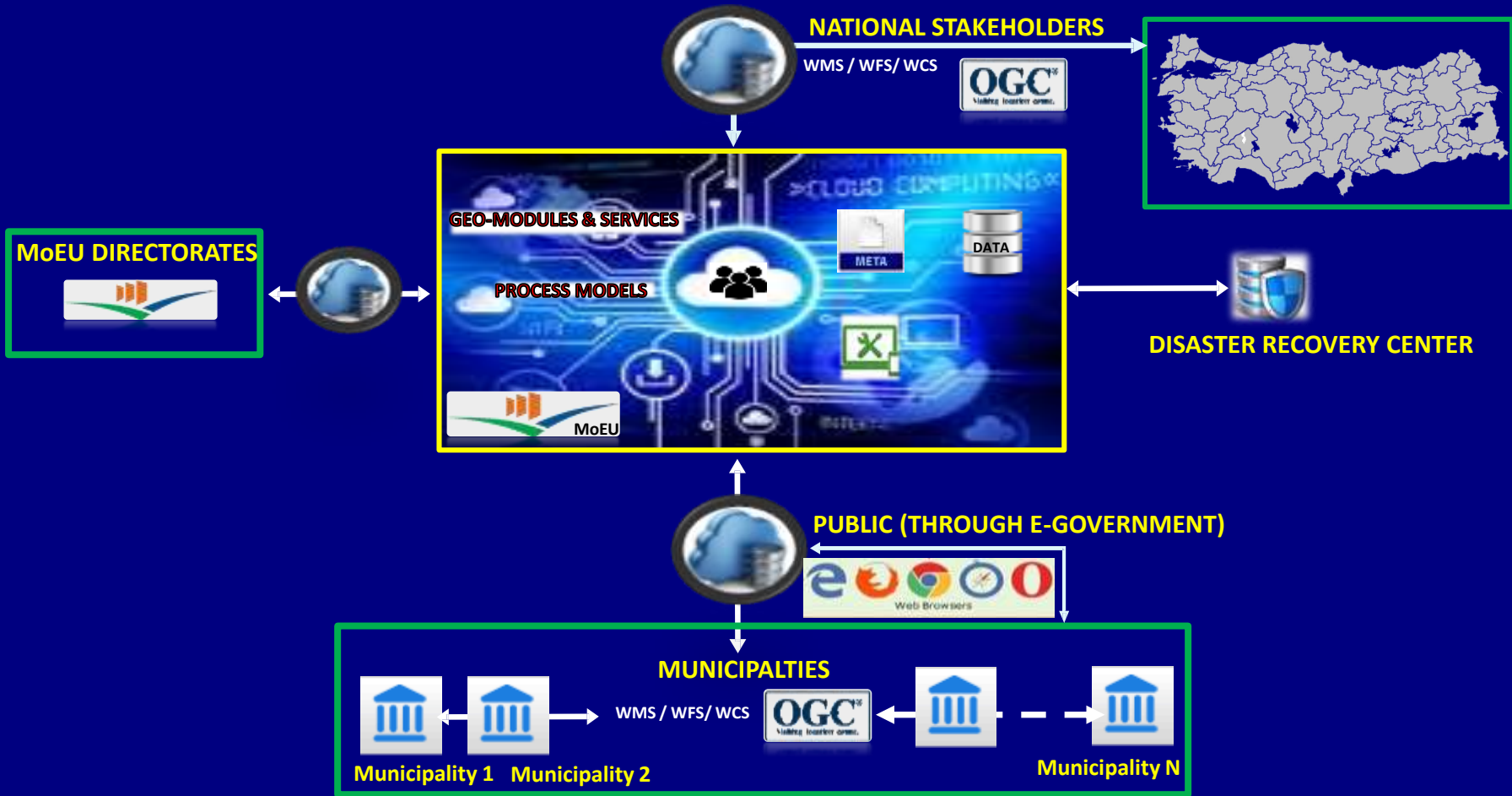




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Standard Geospatial Data through Standard Geospatial Service for an Effective Geospatial Frame







Cloud-based Geospatial Modules

- ❖ *Cloud Storage*
- ❖ *Cemetery Module*
- ❖ *Topographic Map*
- ❖ *Expropriation*
- ❖ *Infrastructure*
- ❖ *Building Information Management*
- ❖ *Building Inventory Module*
- ❖ *Address Assessment*
- ❖ *Urban Information Module*
- ❖ *Application of Article-18*
- ❖ *Process Management*
- ❖ *INSPIRE Data Management Module*
- ❖ *Cloud Infrastructure*
- ❖ *Training Portal*





Cloud-based Geospatial Modules

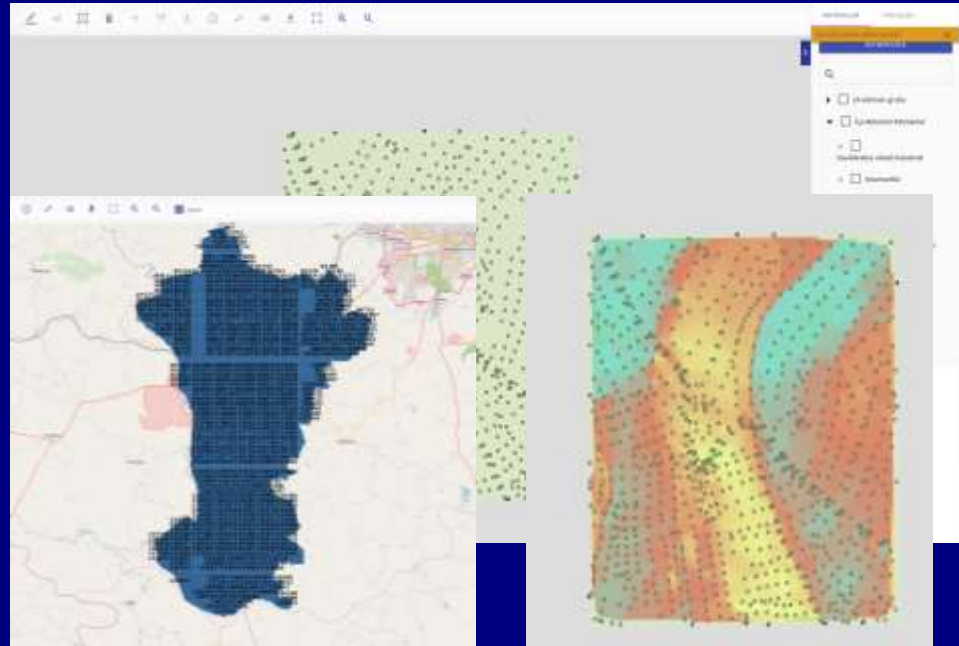
❖ *Building Information Management*





Cloud-based Geospatial Modules

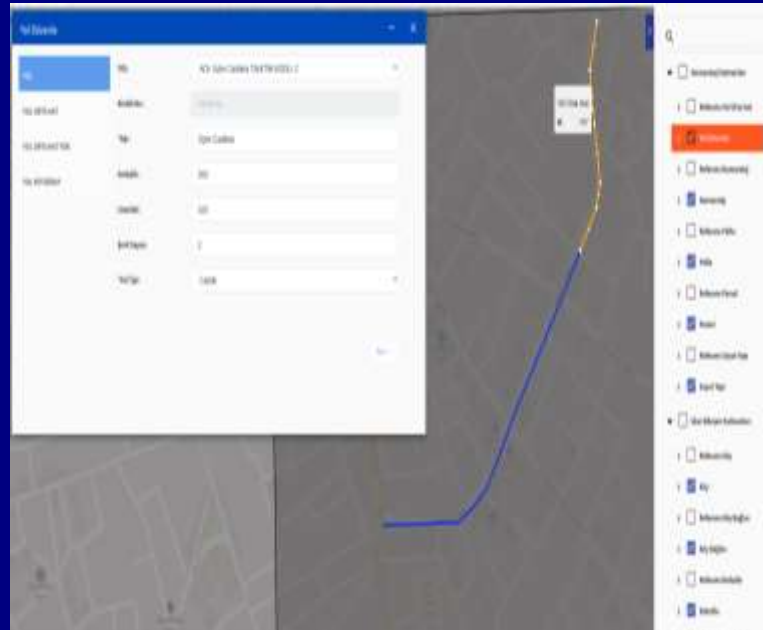
❖ 3D Topographic Map





Cloud-based Geospatial Modules

❖ Address Assessment





Cloud-based Geospatial Modules

❖ Application of Article-18

The screenshot displays a web application interface for managing parcels. On the left, a map shows a grid of parcels in shades of green and grey, with one parcel highlighted in red. On the right, a sidebar titled 'Dağılım Parsel Listesi' (Parcel Distribution List) contains a table of parcel data. The table has columns for 'No.' and 'Alan (m²)'. The 10th row is highlighted in grey. Below the table, there are sections for 'Dağılım Çizim: 1/5000' and 'Dağılım Tapu Listesi'.

No.	Alan (m ²)
1001	
1002	
1003	
1004	
1005	
1006	
1007	
1008	
1009	
1010	





Cloud-based Geospatial Modules

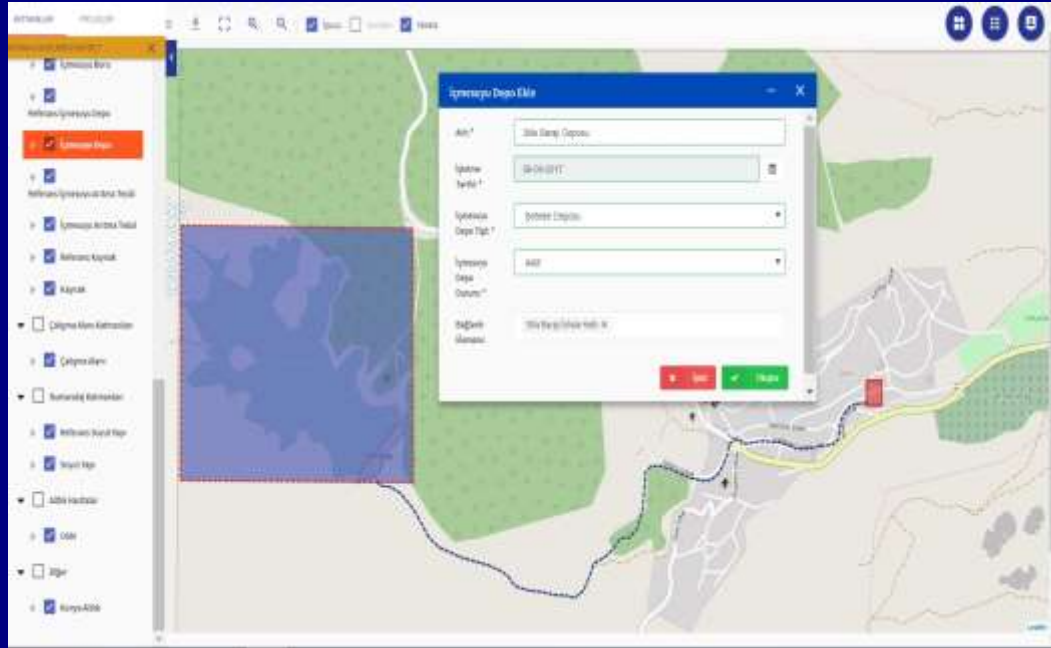
❖ *Address Assessment*

The screenshot displays a web-based geospatial application interface. On the left, a data entry form titled 'Adres Değerlendirme' (Address Assessment) is visible, with fields for 'Adres No' (Address No), 'Adres Adı' (Address Name), 'Yol No' (Road No), 'Yol Adı' (Road Name), 'Mahalle' (Neighborhood), 'İlçe' (District), 'İl' (Province), and 'Durum' (Status). The main area is a map showing a street network with a highlighted path in blue and yellow. On the right, there is a search bar and a list of layers or filters, including 'Yol' (Road), 'Bina' (Building), 'Yeşil Alan' (Green Area), and 'Su' (Water).



Cloud-based Geospatial Modules

❖ Infrastructure





Cloud-based Geospatial Modules

❖ Cloud Storage

The screenshot displays a web-based cloud storage interface. On the left, there is a navigation sidebar with options like 'Home', 'Recent', 'Shared with me', 'Shared with others', 'My Drive', and 'Trash'. The main area shows a list of folders and files. The table below represents the data shown in the interface.

Item Name	Created	Size	Access
Root			
01	01/01/2018	100	100
02	02/02/2018	200	200
03	03/03/2018	300	300
04	04/04/2018	400	400
05	05/05/2018	500	500
06	06/06/2018	600	600
07	07/07/2018	700	700
08	08/08/2018	800	800
09	09/09/2018	900	900
10	10/10/2018	1000	1000



Process Modelling & Management

4 Pilot Areas



Objective:

- Provide a common process management environment by constructing “To-Be” process models for Local Governments and putting these models into service via Process Modelling and Management Software running on cloud platform in order to standardize process flows of institutions, enable scalability and process optimization.

Target Stakeholders:

- Local Governments
- Provincial Directorates of MoEU
- 12 Government Institutions

Target Outcomes:

- Upskill institutions in process improvement
- Provide a common ground for producing standard geographical and administrative data
- Enable institutions to design and execute their own process models.

Stages of Implementation:

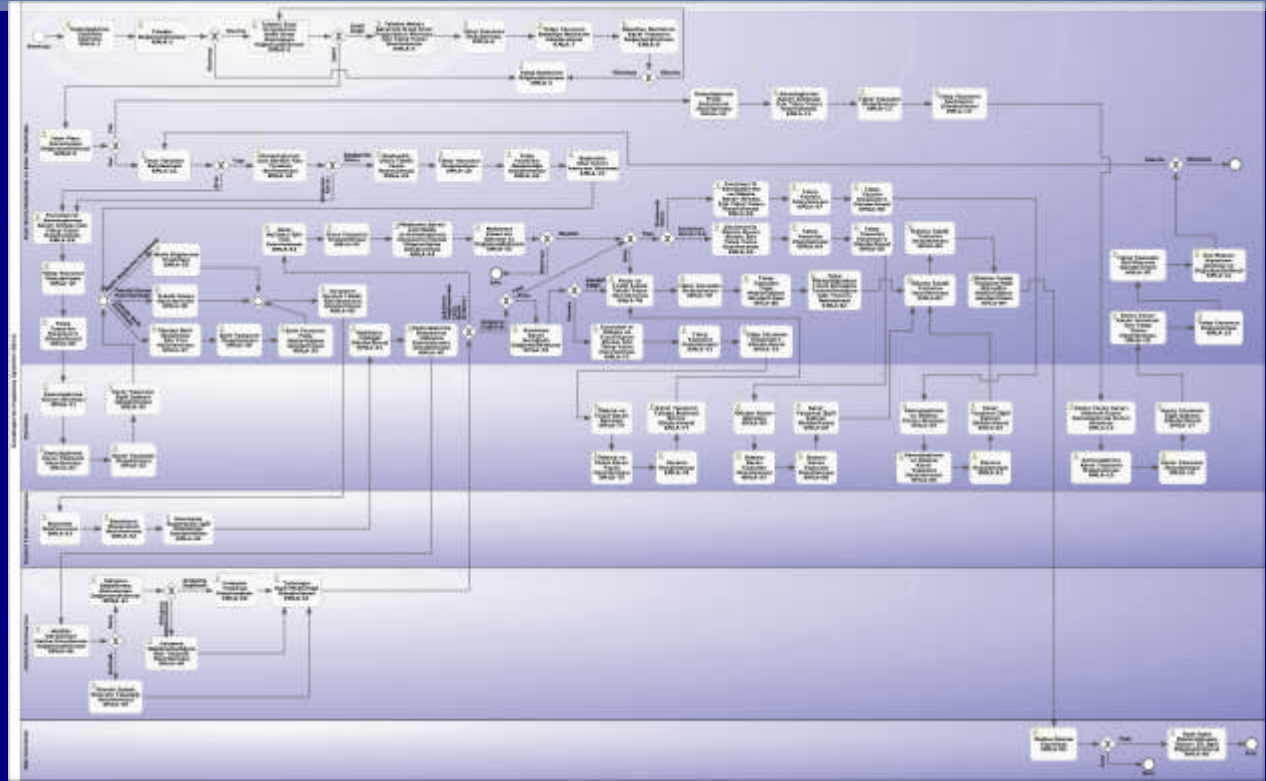
- “As-Is” and “GAP” Analysis – At 4 Pilot Local Governments
- Business Areas – 6 Major Business Areas Covered
- “To-Be” Process Modelling – Optimized and Refined Process Flows
- Cloud-Based Process Modelling and Management Software
- Synchronization – Between Process Modelling and Management Software & Business Application Software Systems
- Deployment – Putting Process Models into Service
- Scale – Measure Performance and Improve Models





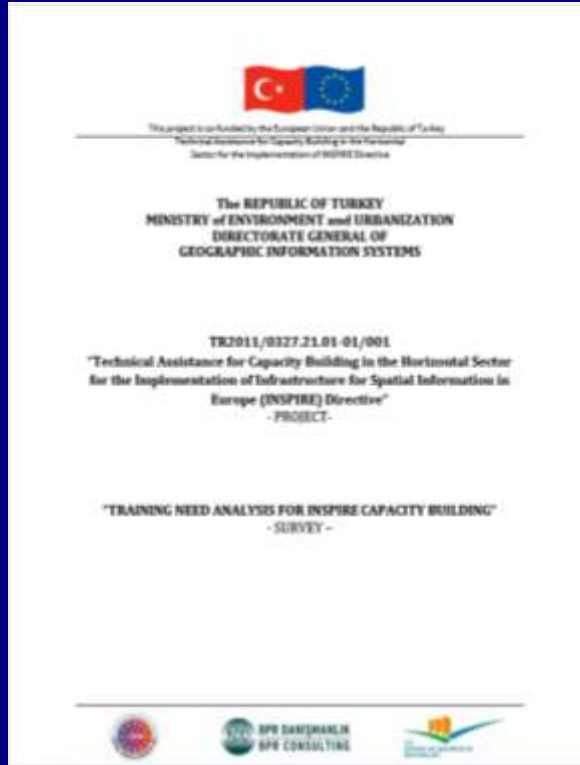
Process Modelling & Management

- ❖ BPM Notation
- ❖ Activiti – Open Source Business Process Management Platform
- ❖ Staff Task Assignment
- ❖ Execution of Processes
- ❖ Model Pools
- ❖ Integration with Application Software Modules





Training and Awareness raising



- ❖ Training Need Analysis Report Prepared where a web-based 'Survey' is carried out
- ❖ 1890 participants including 651 from Local Administrations.
- ❖ INSPIRE Training Programs (13 Groups) designed for different profile levels of participants according to the survey outputs





Training and Awareness raising

INSPIRE ADVANCED: DATA SPECIALIST

Geographic Information Systems (GIS)	Geographical Data Infrastructure (GDI)	INSPIRE Implementing Rules	Geographic Information Systems (GIS)	INSPIRE Implementing Rules	INSPIRE Network Services	IMPLEMENTATION: Data Transformation/Sharing	IMPLEMENTATION: Data Transformation/Sharing
			GIS and Data Models	INSPIRE Rules of Data Description	INSPIRE Network Services	Data Harmonization on Thematic field	Data Harmonization on Thematic field
Basics of GIS and Geographical Data Models	Geographical Data Infrastructure (GDI)	INSPIRE Implementing Rules	INSPIRE Network Services	IMPLEMENTATION: Data Transformation/Sharing	INSPIRE Geoportal	Schema Matching and Data Transformation I	Schema Matching and Data Transformation I
	Geographical Data Infrastructure	INSPIRE/TNGIS Data Themes and Rules of Description			Metadata and Catalog Service	Schema Matching and Data Transformation II	Schema Matching and Data Transformation II

INSPIRE BASIC: PUBLIC INSTITUTIONS - CENTRAL

INSPIRE ADVANCED: NETWORK SPECIALIST

Geographic Information Systems (GIS)	Geographical Data Infrastructure (GDI)	INSPIRE Implementing Rules	Geographic Information Systems (GIS)	INSPIRE Implementing Rules	INSPIRE Network Services	IMPLEMENTATION: Data Transformation/Sharing	IMPLEMENTATION: Data Transformation/Sharing
			GIS and Data Models	INSPIRE Rules of Data Description	INSPIRE Advanced Network Services	Web map Server configuration	Data Harmonization on Thematic field
Data Production Techniques and Map Projections	INSPIRE Directive and Relevant EU Policies	Contents of INSPIRE/UIS Data Themes	Data Quality	INSPIRE Data Themes and Data Description Documentation	INSPIRE Geoportal	Web Map Server installation	Schema Matching and Data Transformation I
Geographical Database Design and Management	INSPIRE/TNGIS Policies, Principles and Components	Interoperability of INSPIRE/TNGIS Conceptual Data Models, Components	Geographical Database Design and Management	Interoperability of INSPIRE Conceptual Data Models, Components and Data Sets	Metadata and Catalog Service	Web Map Server management	Schema Matching and Data Transformation II
Tasks of Public Institutions and GIS Implementations	Geographical Data Standards, with examples ISO 191XX and OGC Standards	INSPIRE in practice	Geographical Data Standards Sense Web	Advanced INSPIRE	Metadata and Data Validation test	Implementation, development and testing	INSPIRE/National Geographical Data portal





Training and Awareness raising





Training and Awareness raising

❖ 4 Seminars (Professionals and Stakeholders);

OGC Overview, OGC Standards

INSPIRE Overview, OGC Standards

Best NSDI-Focused Practices and INSPIRE Relations

Developing 3D City Models with CityGML

Use of INSPIRE Implementation Schemas for Data Harmonization

Best Practices for INSPIRE Data Harmonization

National Spatial Data Infrastructure ('SDI') Implementations in Turkey

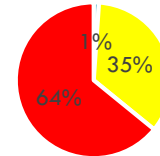
❖ 2 Technical Study Visits

Spain and Italy

❖ 3 Work-shops

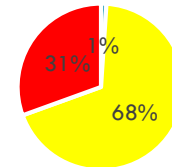
❖ 2 INSPIRE Conference Participation

SEMINAR ENHANCED MY AWARENESS in OGC,INSPIRE and SDI ACTIVITIES.



■ NOT AT ALL ■ WELL ■ VERY WELL

SEMINAR SESSIONS WERE RELEVANT TO NEEDS



■ NOT AT ALL ■ WELL ■ VERY WELL





Regulations and INSPIRE Impact Analysis



Legislative Regulation

Memorandum of Understanding

Data Exchange Strategy

To Be Plan

Implementation Plan and Methodology

Organization Plan



Project web site (www.inspire.gov.tr)

The screenshot shows the homepage of the project website. At the top, there are logos for the Ministry of Environment, Urbanization and Climate Change of Turkey and the European Union. The main header contains the text: "Technical Assistance for Capacity Building in the Horizontal Sector for the Implementation of the INSPIRE Directive". Below this, there is a search bar and language options for EN and TR.

The main content area features a large title: "Technical Assistance for Administrative Capacity Building in the Horizontal Sector for the Implementation of the INSPIRE Directive". To the left of this title is a vertical navigation menu with the following items: Main Page, Upcoming Events, Announcements, INSPIRE in Press, Useful Links, and Contact.

To the right of the title is a graphic with a map of Turkey and icons representing various aspects of the project, including "INSPIRE in Press", "Technical & Administrative Capacity Building", and "INSPIRE in Press".

Below the main title, there are several navigation buttons: Project Information, Activities, Pilot Areas, Video-Photo Gallery, Publications, and Legislations.

At the bottom of the main content area, there is a section titled "Activities" with a photo of a meeting. The photo shows a group of people sitting around a table in a conference room. Below the photo, the text reads: "1st STEERING COMMITTEE MEETING, ANKARA".

On the left side of the page, there is a logo for "Training Level Information System" and another logo for a person presenting at a screen.





*This project is financed by
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Republic of Turkey.*

THANK YOU



Onur Lenk (honour2404@gmail.com) Team Leader (On behalf of Consortium)
Yıldırım Bayar (dyildirim.bayar@csb.gov.tr) Department Director ,MoEU (On behalf of Beneficiary)

This publication has been developed with the financial assistance of the European Union.

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