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Workshop on the Applications of Global Navigation Satellite Systems
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ROEnvGeoPortal: An Advanced Support for Environmental Monitoring and Dissemination of Spatial Data at National Level in Romania

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European Union

Project financed under PHARE

Ministry of Environment and Sustainable Development

The three components of the Project nr. 7 of the PHARE programme 2004-2006 for the environmental sector *"Supporting the Environmental Protection through GIS"* are as follows:

1. ***"Investment on Ortho-rectified High Resolution Images at National Level for Developing GIS Maps"***

KLM aerocarto

Delivery of VHR ortho-rectified satellite data :
- SPOT 5 –full coverage,
- K2 & Ikonos – 7% of the territory

2. ***"Investment Support to Assist the Environmental Protection Decisions through GIS System"***

BULL

- **Hardware, software support** for the new National Environmental Spatial Data Infrastructure,
- **GIS training support**

3. ***"Technical Assistance to Develop the Environmental related GIS Maps"***

Carrying out GIS maps :
- With general content
- For the nature conservation
- For industrial pollution
- For air quality and noise
- For water quality
- For waste management

Creation of the ROEnvGeoPortal

European Union

Project financed under PHARE

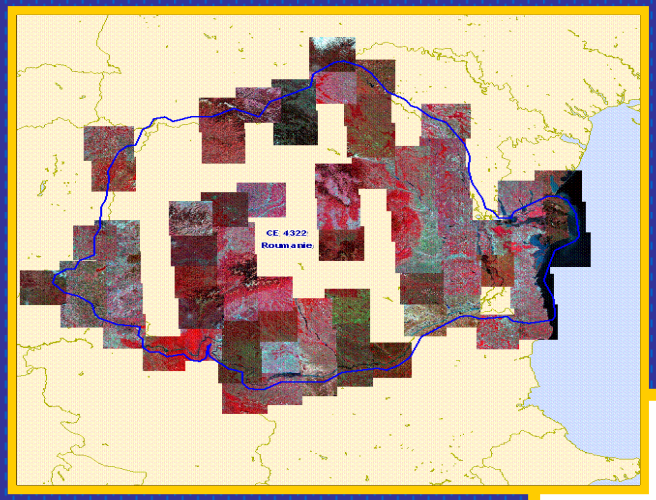
Ministry of Environment

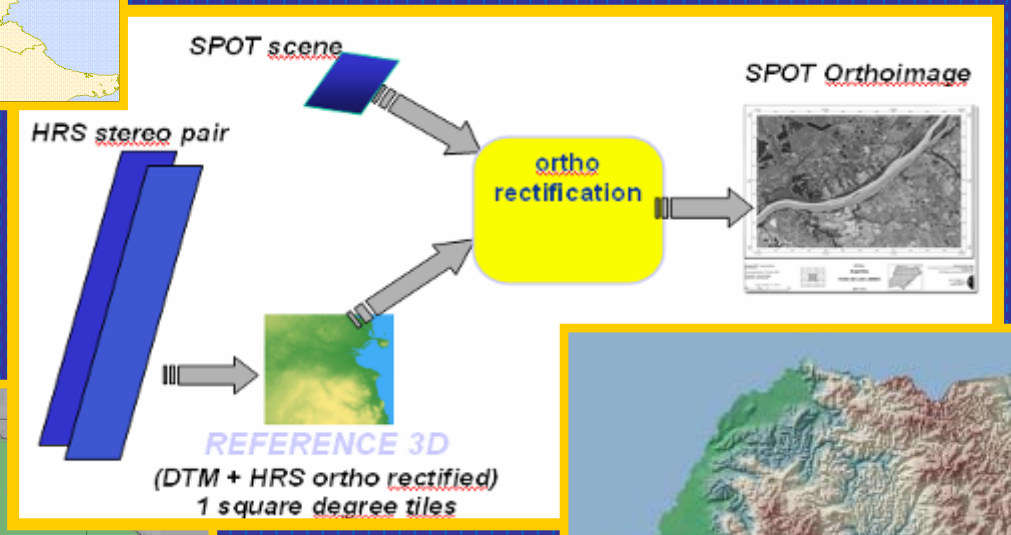
and Sustainable Development

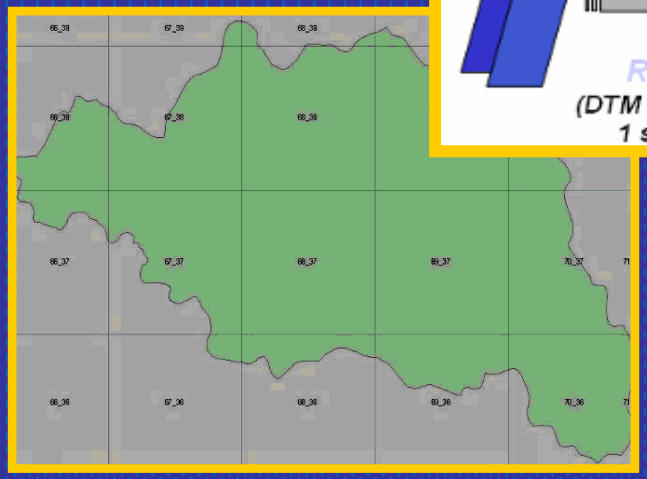
1. "Investment on Ortho-rectified High Resolution Images at National Level for Developing GIS Maps"

KLM aerocarto

Generation of SPOT 5 Ortho - Coverage







Tailoring the coverage
(10kmX10Km grid)

The aspect of HRS DTM for Romania

European Union

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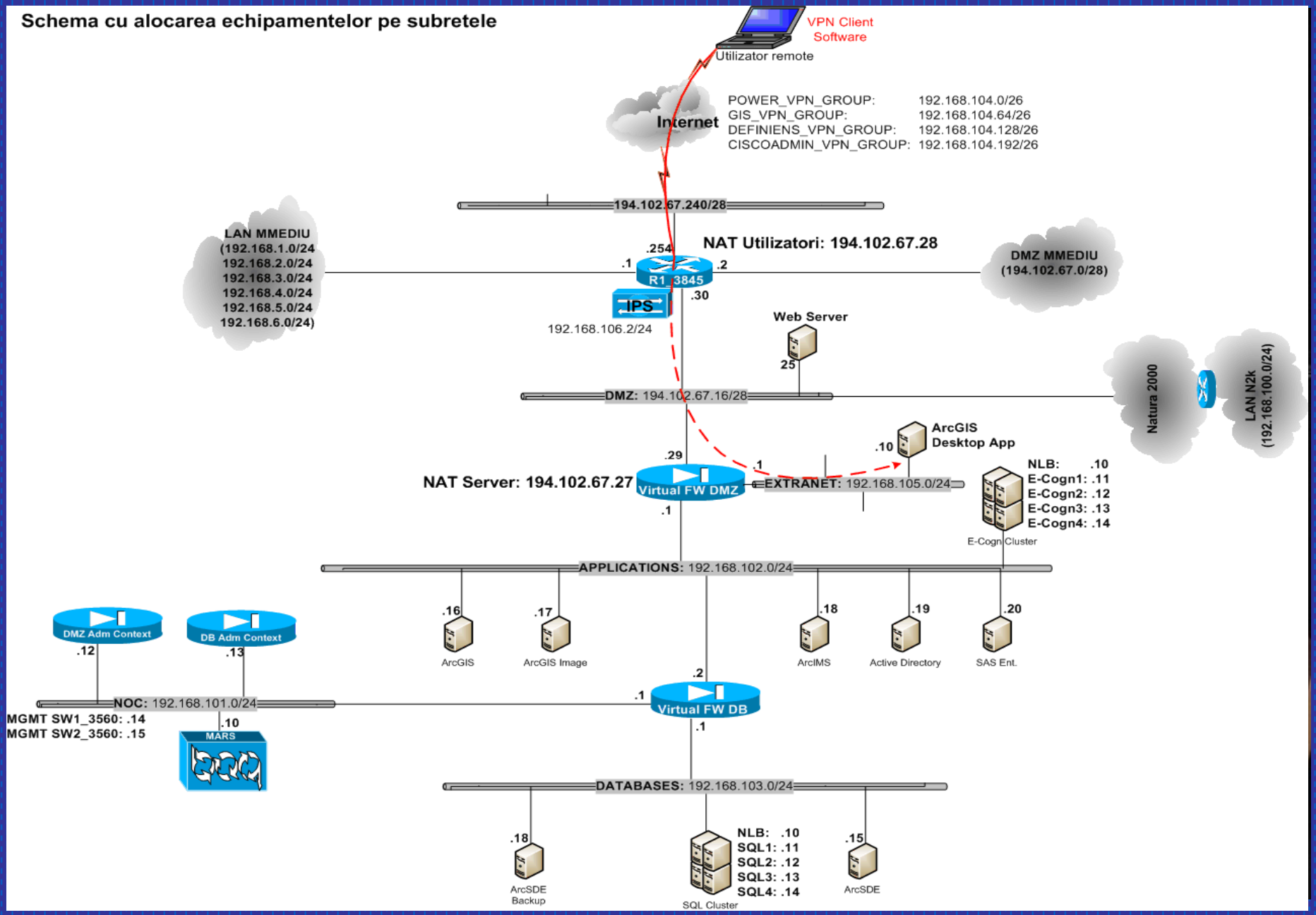
2. "Investment Support to Assist the Environmental Protection Decisions through GIS System"

Up-dating / development of the Biodiversity infrastructure and training of staff belonging to central, regional and local level Environmental Agencies.

This new infrastructure includes clusters for ArcGIS Server and Definiens (installed at the MESD hq).

GPS devices, Desktop ArcGIS and ERDAS Imagine licenses are now powerful tools to be used intensively by the subordinated agencies or institutes.

The National Environmental Spatial Data Infrastructure

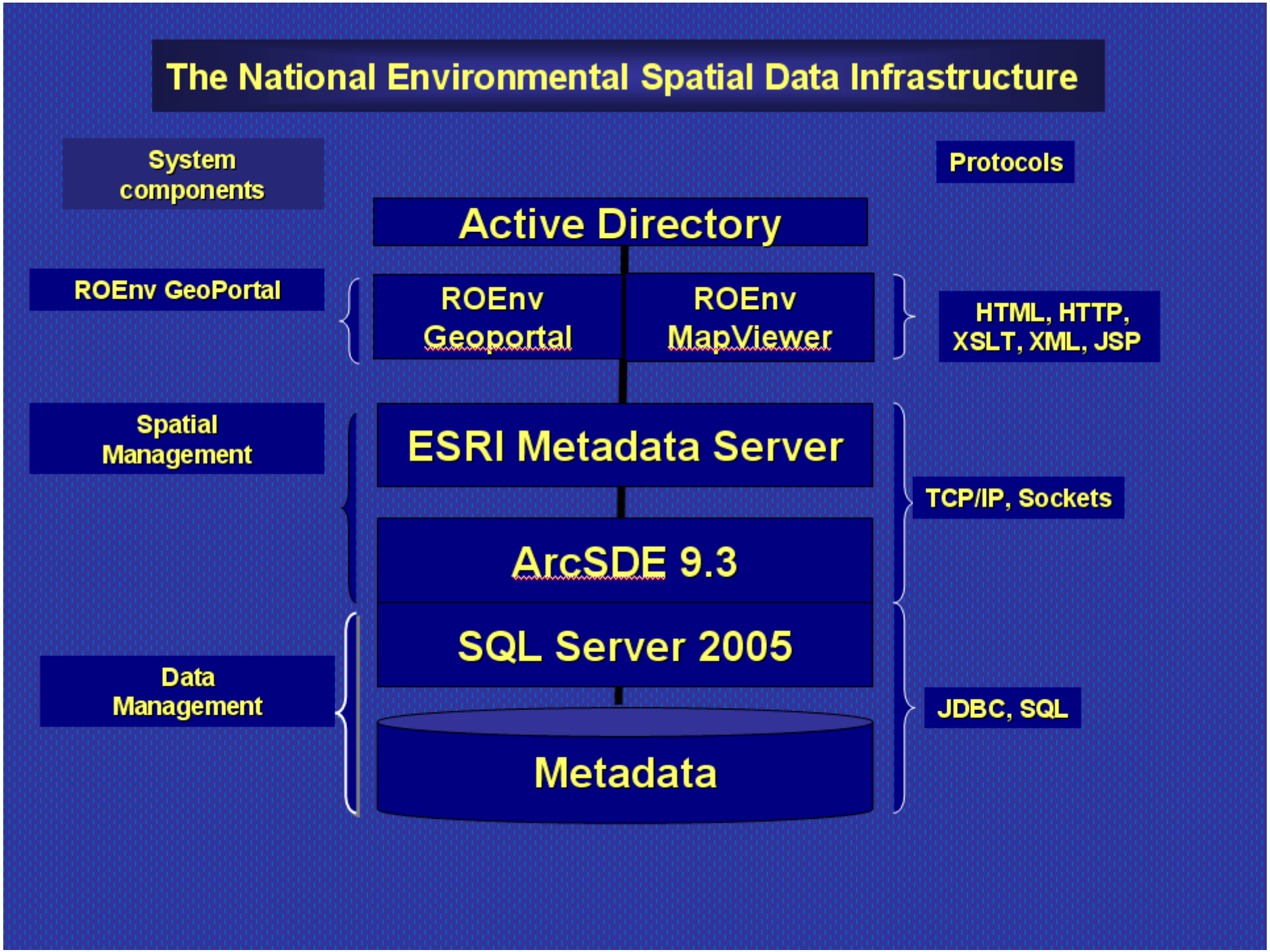


The National Environmental Spatial Data Infrastructure

- 12 servers (4 processors Dual Core each)
- 8 servers (2 processors Dual Core each)
- SAN FC 15 TB
- Backup System
- Security System (CISCO 3845 rooter, MARS, ASA)

- 65 working stations GIS
- 8 A0 plotters
- 8 A0/A1 scanners
- *60 PDA GPS*
- *10 geodetic GPS*
- 10 Tablet PC (heavy case)
- *10 PDA GPS (heavy case)*
- 60 digital cameras CMOS
- 64 mobile working-stations GIS

- 3000 man/days GIS training
- 10 000 maps 1:10.000 & 1:5.000
- 2824 maps 1:25.000


The National Environmental Spatial Data Infrastructure
System components
Protocols
Active Directory
ROEnv GeoPortal
ROEnv Geoportal
ROEnv MapViewer
HTML, HTTP, XSLT, XML, JSP
Spatial Management
ESRI Metadata Server
TCP/IP, Sockets
ArcSDE 9.3
SQL Server 2005
Data Management
JDBC, SQL
Metadata

European Union

Project financed under PHARE

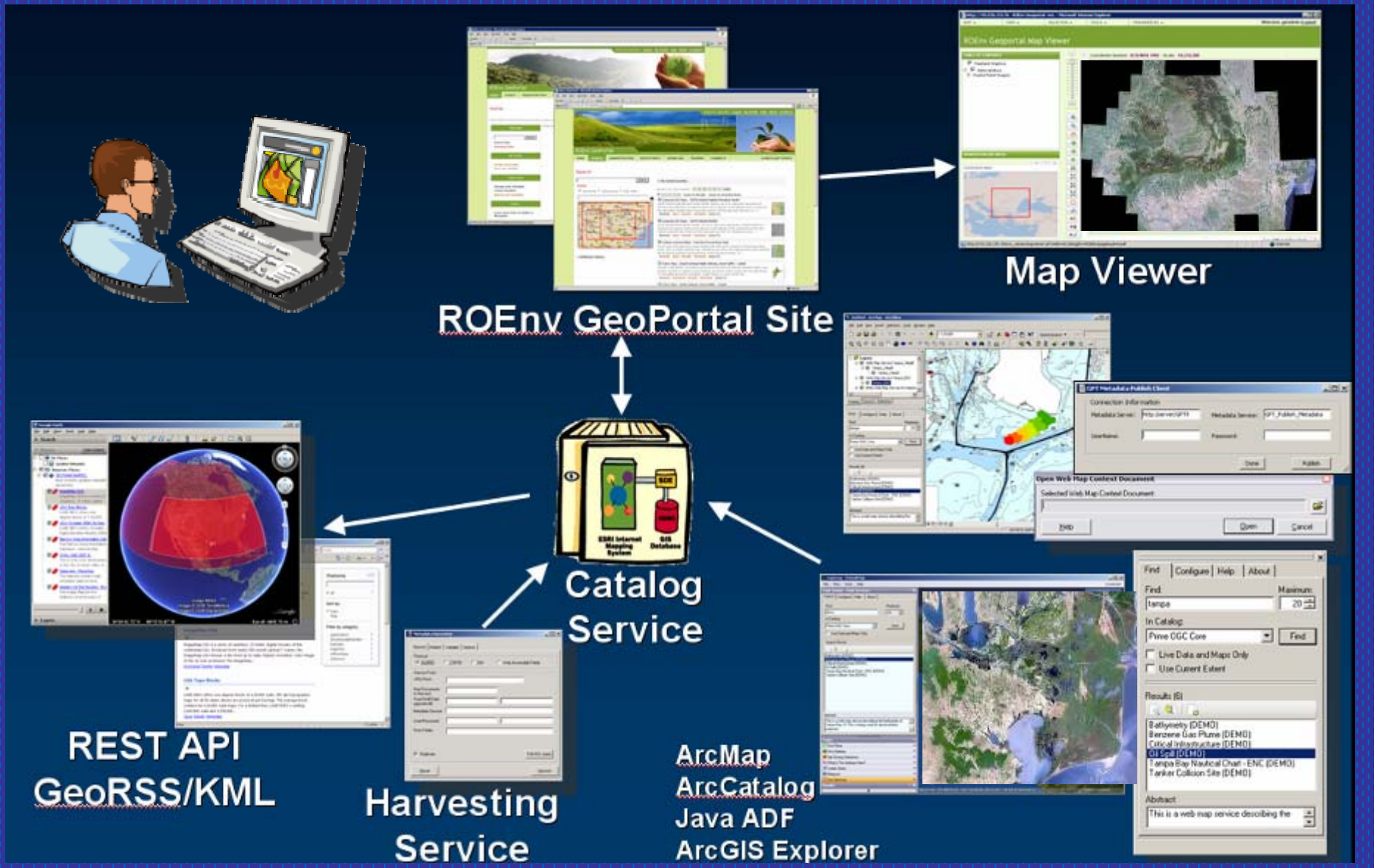
Ministry of Environment and Sustainable Development

3. Technical Assistance to Develop Romanian Environmental related GIS maps PHARE project RO 2005/017-553.03.03.04.01 -

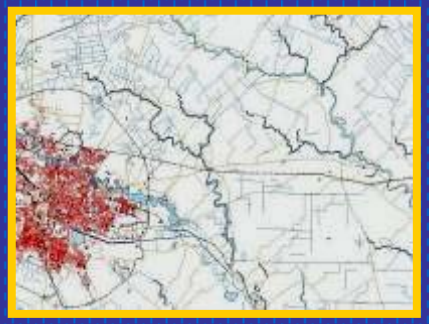
Implementing Authority:	Ministry of Environment and Sustainable Development
Contracting Authority:	Central Finance and Contracts Unit, Ministry of Finance and Economy
Beneficiary:	Ministry of Environment and Sustainable Development
Consultant:	Consortium Leader: IGN FRANCE INTERNATIONAL
	Partners: ROSA (RO), GEOSYS(F), DDNI (RO), GEOSYSTEMS (RO), CS-SI (F); K.U.LEUVEN RD (B), IGC EUROTOPO (RO), VITO(B), EUCC INT(NL).
	Subcontractors: TRADSYM (RO), GREEN MAP (RO)

The project realized in the framework of EU Phare program had as main goal the production of thematic harmonized data for the Romanian Ministry of Environment and Sustainable Development (MESD) keeping in mind the EU regulations for ensuring the interoperability between the interior (local, regional, national) and EU level.

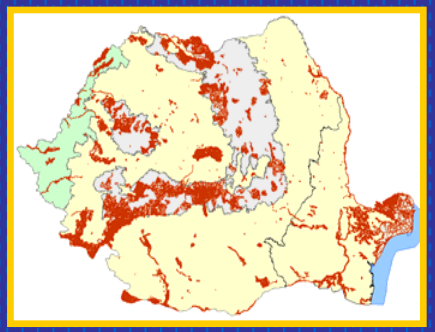
ROEnvGeoPortal Components



Elaboration of GIS Maps and Datasets



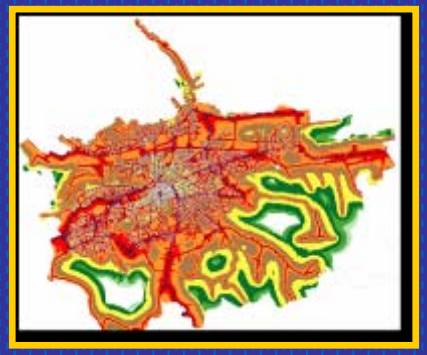
1. Topographic map



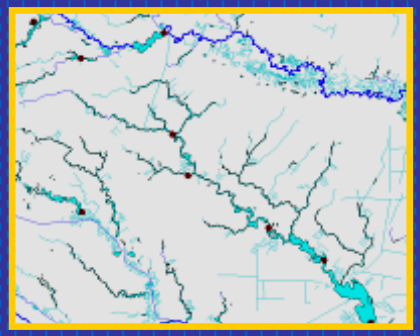
2. SCI Natura 2000 map

1. With general content (to ensure the coherent topographic support)
2. For the nature conservation
3. For the representation of industrial pollution
4. For air quality and noise
5. For water quality
6. For waste management

3.Mapping of an industrial waste landfill



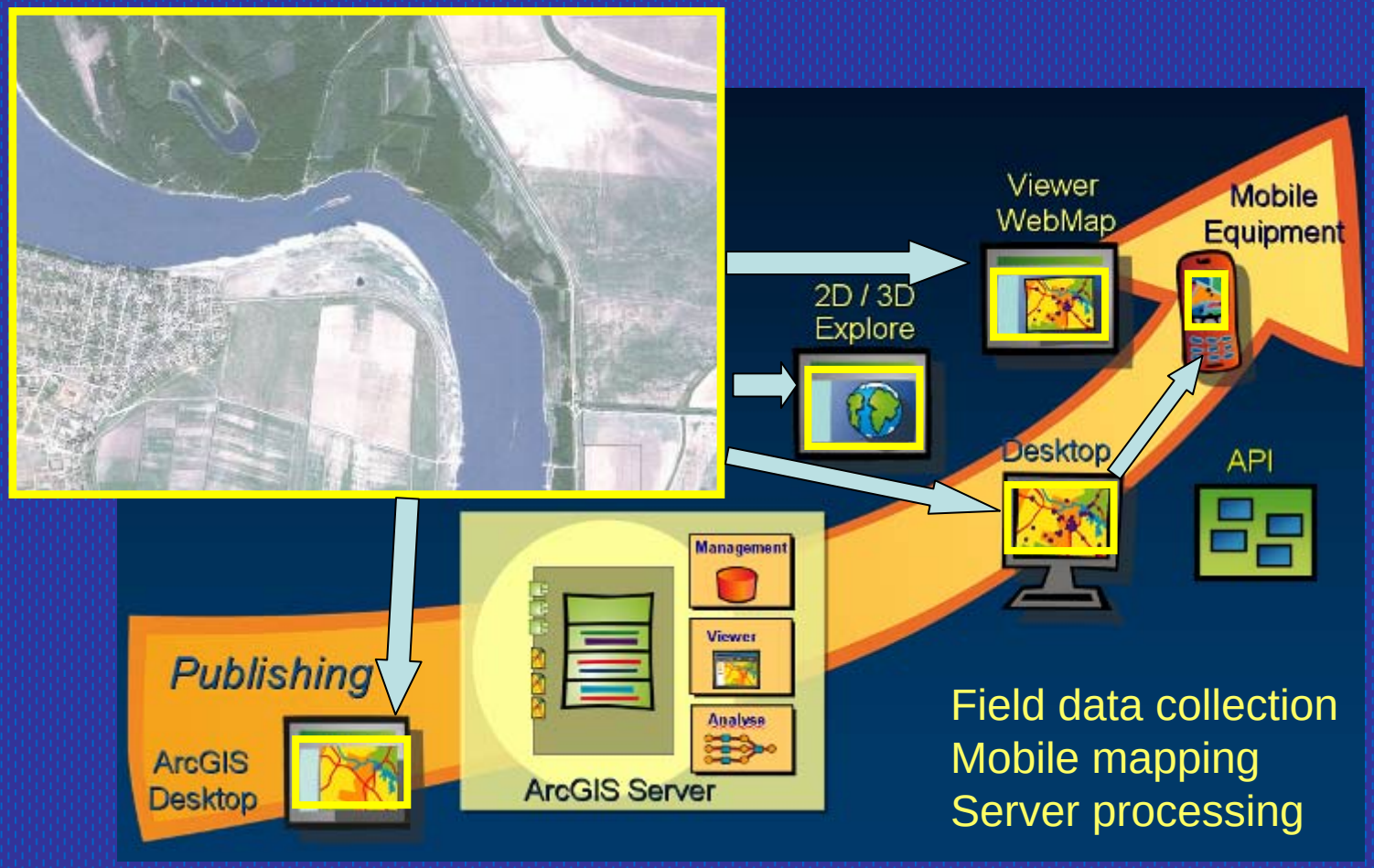
4. Noise map



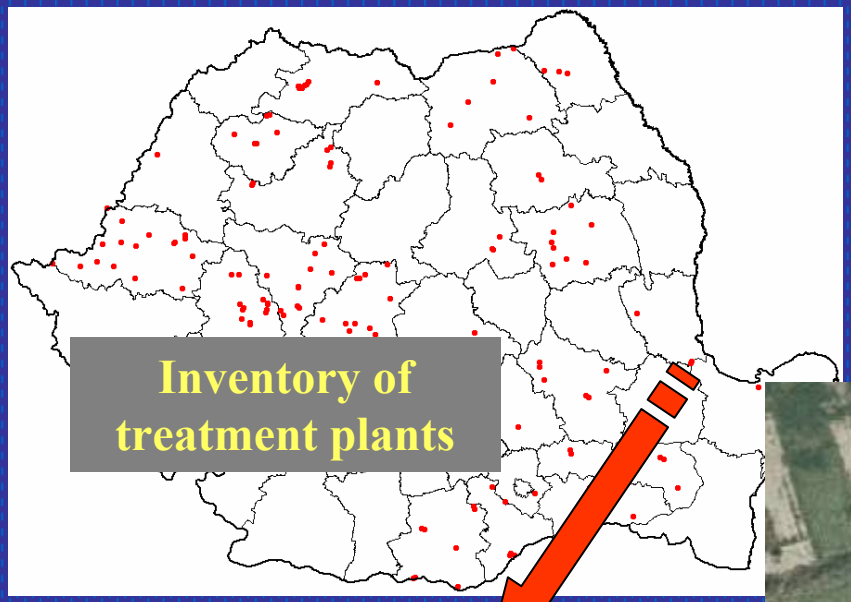
5. Map of lake water quality monitoring station/facilities

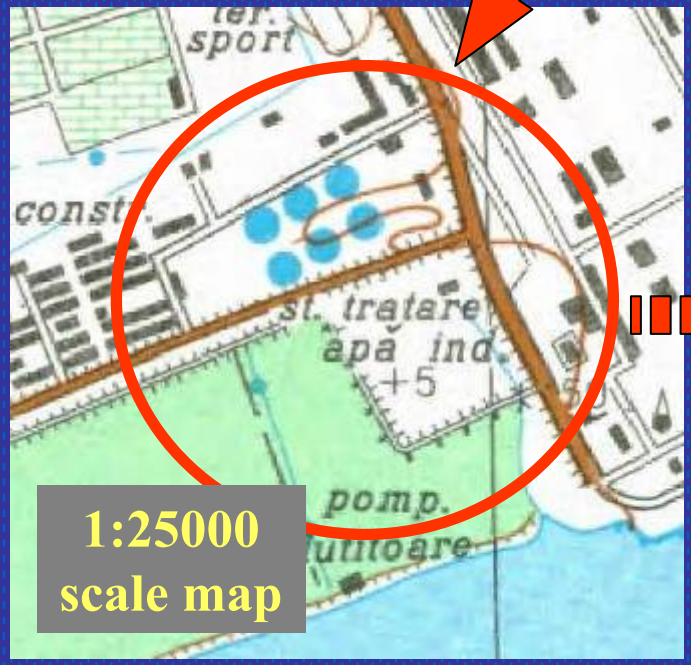
6. Mapping of a municipal waste landfill

Using the SPOT Ortho-Coverage and as Main Support for Datasets Creation / Updating



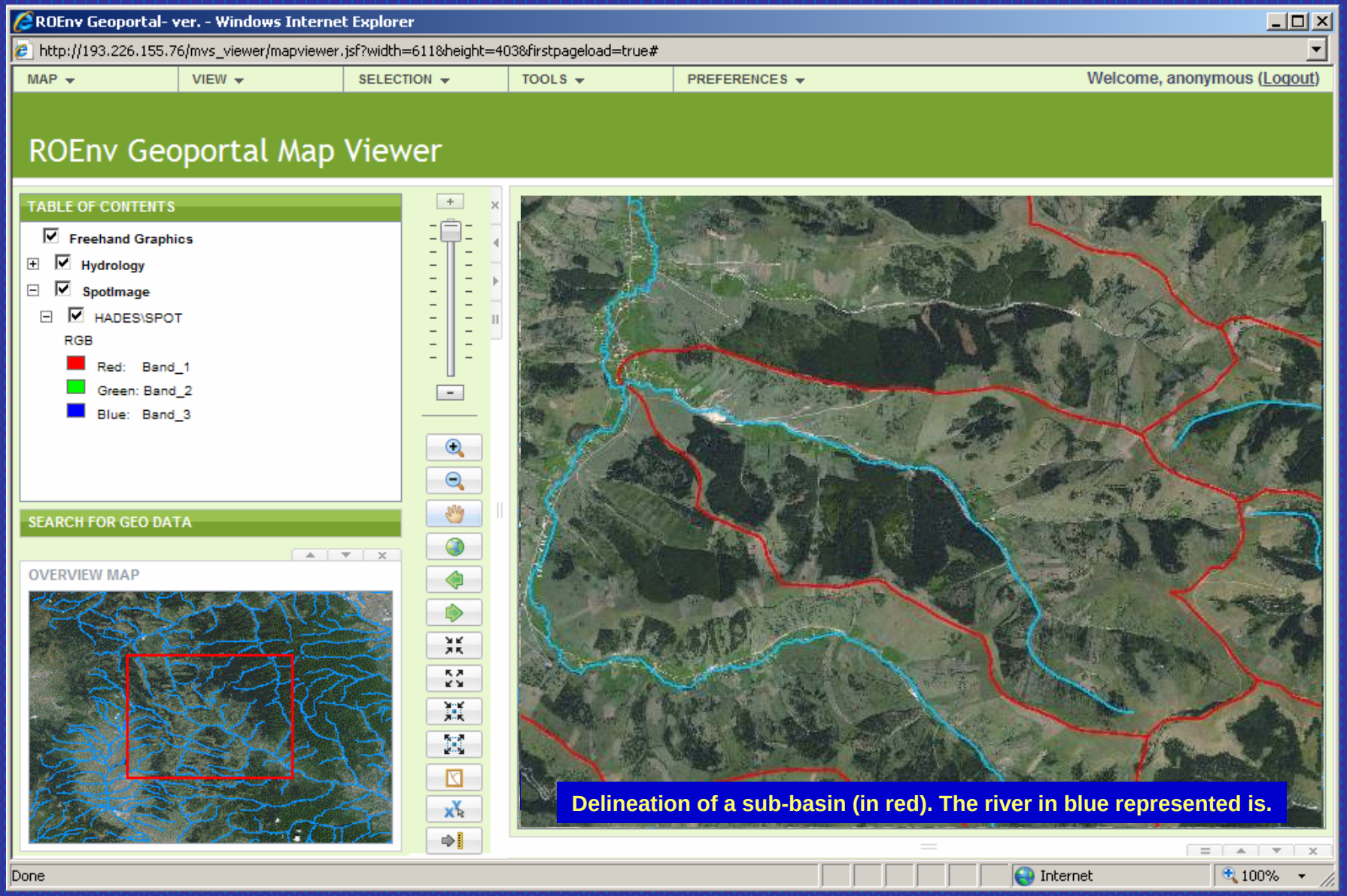
Water Treatment Plants, Update Topology and Location Using Different GIS Inputs (example)





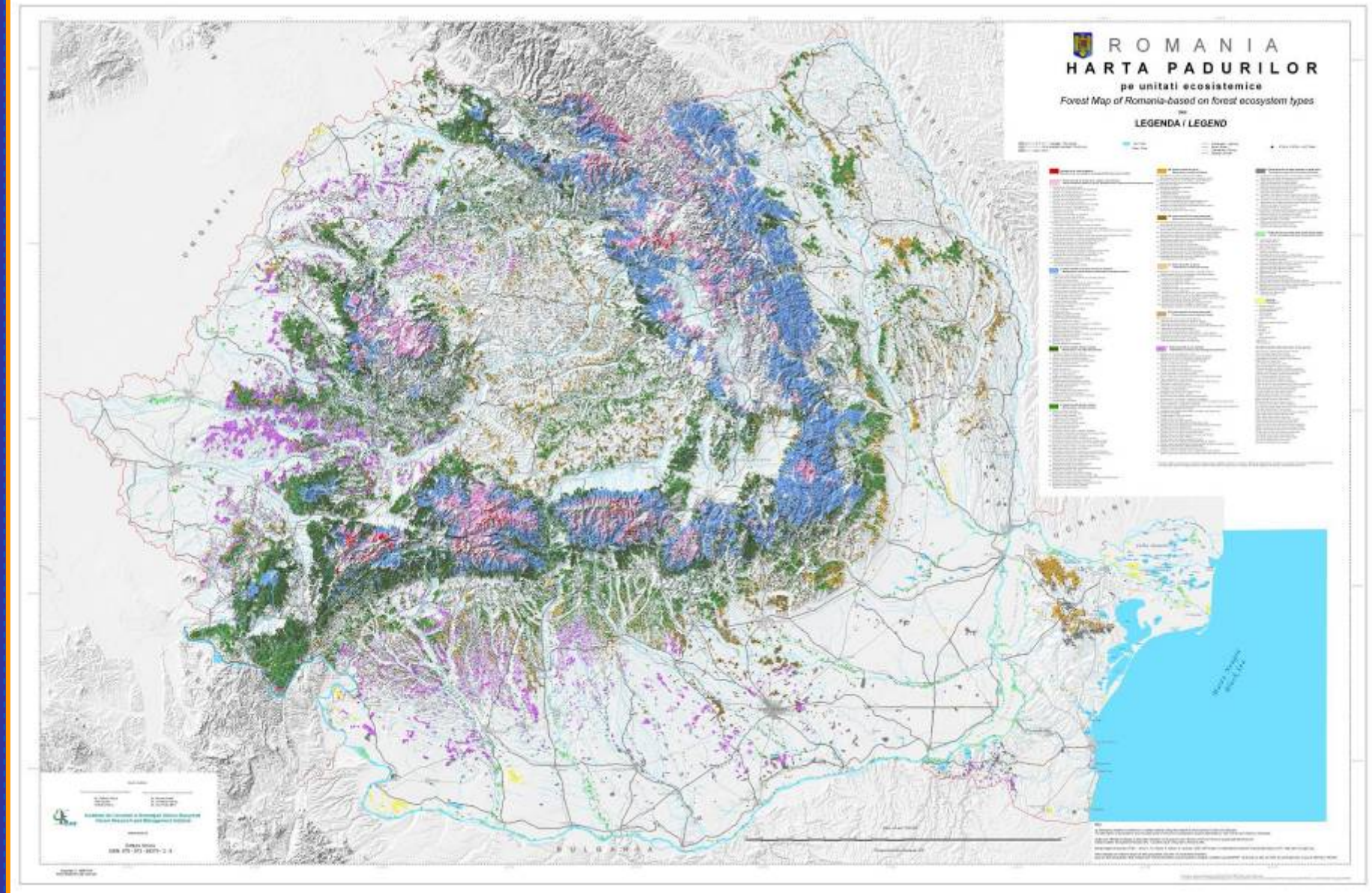
Interpretation on the SPOT 5 ortho-coverage support

The Hydrographic Network on the Map Viewer



Updating the Hydrographic Network on the SPOT 5 orthoimage

Spatial Analysis and Visual Check-up for Forest Ecosystems Map Creation



Final considerations

More than 50 datasets are available for the use of the Ministry of Environment.

Considering the implementation of the INSPIRE directive, the ROEnvGeoPortal offers wider access to geographic data and services, serving as a catalyst for advanced Spatial Data Infrastructure (SDI) activities in Romania.

The implementation provides users with a set of tools to easily discover, query, and access information on geospatial data holdings and services, including the ability to interactively display and query the data and services.

Final considerations

The deployment of the operational ROEnv GeoPortal allows easy discovery, query and use of geospatial data, Web services, and organizations from existing national, county, and local geographic information system assets.

The GPS solutions are ensuring the rapid and objective up-dating of the datasets. The National Permanent Reference Stations becomes the compulsory support for the integration of new useful data in the system.

In fact, this is the reason to implement the GNSS concepts and constitute the SDI at national, regional and wide world scale.

Thanks for your attention !