



CD-ETA
Interreg Europe



European Union
European Regional
Development Fund

Digitization of natural heritage in Bulgaria

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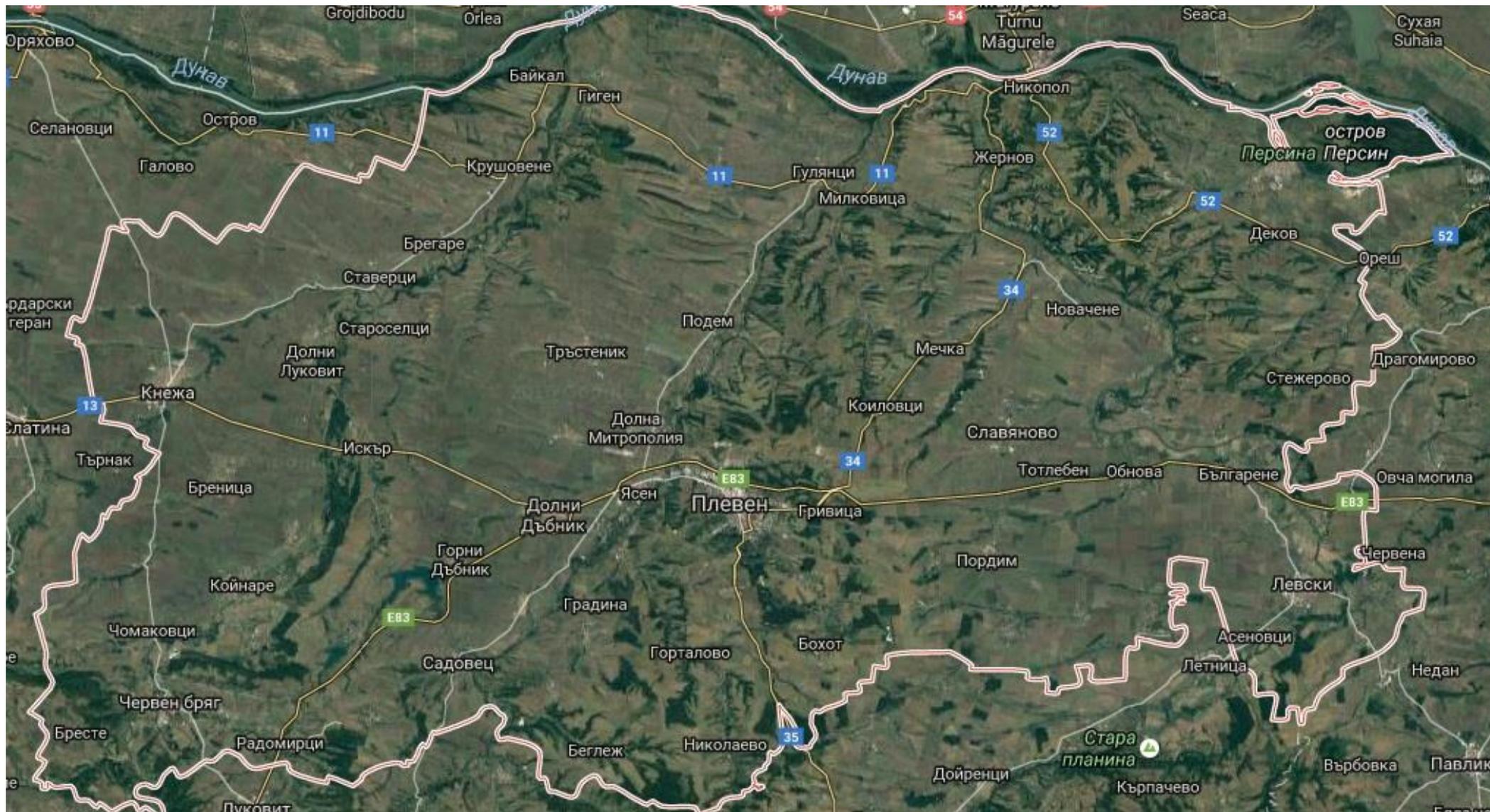
Valencia | 01/02/2017



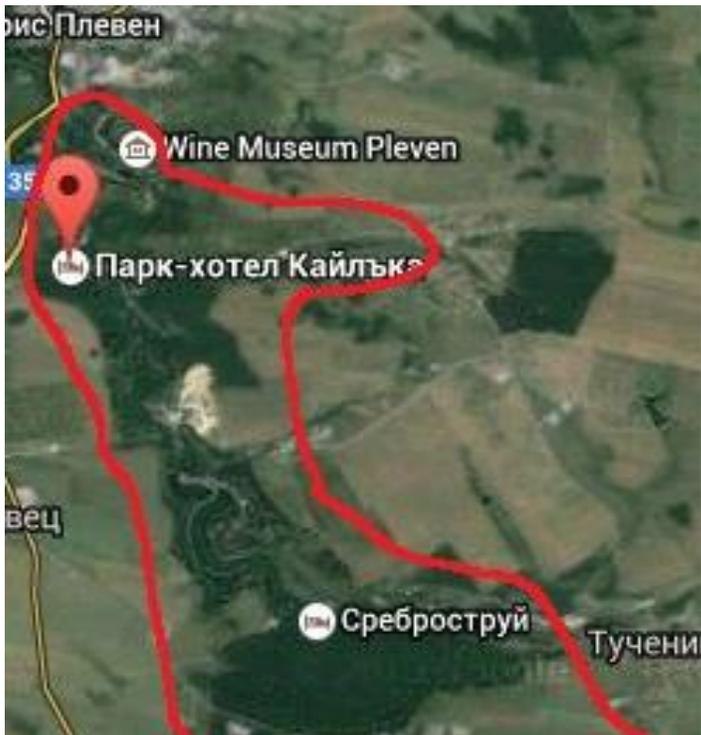
Area: 4 333 km²
Population: 269 760
11 Municipalities



Pleven District is part of Danube lowland, rich in unique nature formations.



Park Kayluka



The Canyon of Chernelka river



Reselets Dolls



Digitization of nature objects is performed for *advertising*, *scientific* and *administration* aims.

Advertising – Popularization of natural objects as tourist destinations

➤ **Project „Share Bulgaria“**

Of Foundation „Interactive Bulgaria“

- Bulgaria has the potential to attract extreme interest from different points of the world , and one well – structured and high – quality database at national level will support cultural exchange, tourist experience and sustainable investment opportunities and partnerships.
- Database, rich in information with high – quality content for free sharing which was created mainly for popularization of key but less known Bulgarian sightseeing, nature objects, traditions and customs in the Global web space by 360 degrees pictures.
- The focus of the project is comprehensive. Besides being an interesting and innovative way to attract tourist interest, the platform can be used for **educational purposes**.



- Mobile application [опознай.бг](https://opoznai.bg)

Opoznai.bg is an electronic catalogue of sightseeing, objects, attractions and events related to tourism, administrated by “**Grabo Media**” SA. The website aims to support tourism development in Bulgaria.

The mobile application **Opoznai.bg** contains audio – visual materials for different objects and nature sightseeing in Bulgaria, divided into categories as well as all the attractions around them. They could be combined in thematic routes and to get information about different cultural and sports events near the searched object.

Users of the website Opoznai.bg are allowed to upload information content about the tourist objects in the catalogue if the content is approved by the Administrators.

[Category „Natural landmarks“](#)

- Detailed information - Every object is published as a separate item through pictures, text, a map describing its geographic location and users feedback.
- The work with the platform is quick and simple thanks to the categorization of the items.
- Availability of thematic routes.
- Low points of the platform: existing only in Bulgarian language.



Administration

- [CadIS](#) – software for cadastre and Agriculture of "Bulgarian software technologies" Ltd.

CadIS is specialized software for working with geographic data in the field of **agriculture** – for outlining boundaries and areas of agricultural parcels, control of their processing and **cadastre** – for designing projects and plans, feasibility studies and geographic analysis.

What does the CadIS ensures for the agriculture users:

1. Accuracy and security of the information submitted
2. Topological data accuracy
3. Prevention of sanctions
4. Time saving



What does the CadIS ensures for the users - geodesists:

1. Actively support of creation and maintenance of the cadastre
2. Easy data import and export
3. Time saving
4. Based on CadIS the municipalities could build geographic system for maintaining cadastral and regulation plans and maps, including the history of changes, as well as urban regulation solutions.

<http://www.cadis.bg/>



Scientific

- <http://caves.4at.info/> – Specialized electronic encyclopedia of Bulgarian caves.
 - Each user after registration may publish photos of caves had visited and photographed.
 - The encyclopedia contains information about 5773 caves.
 - Two access modes: free and registered. Only registered users have access to all information.

Example for information that a free user could receive:

[Cave „Duhlata“](#)



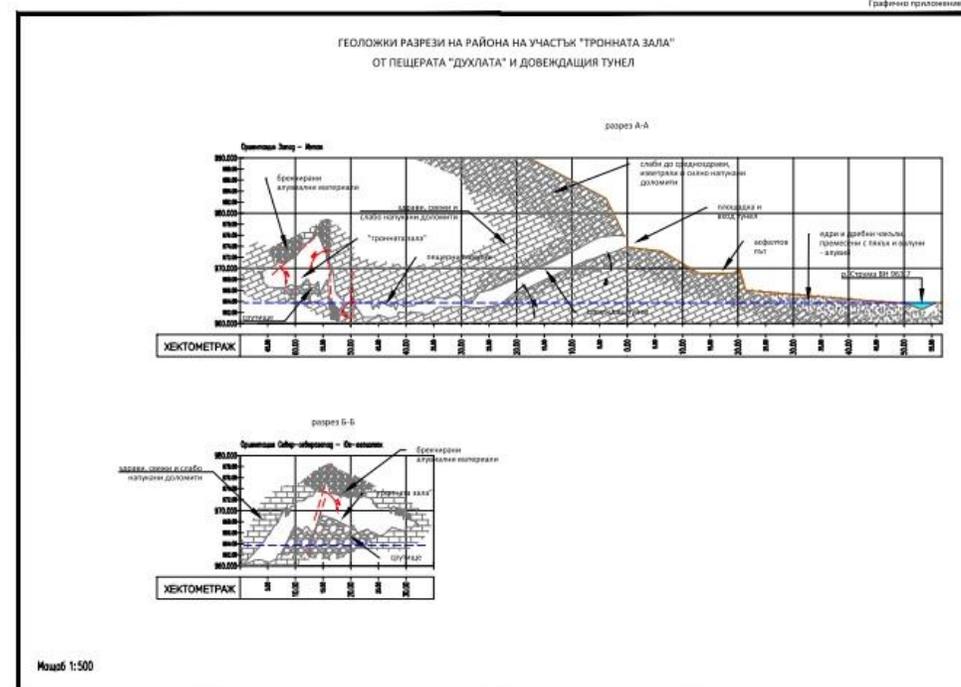
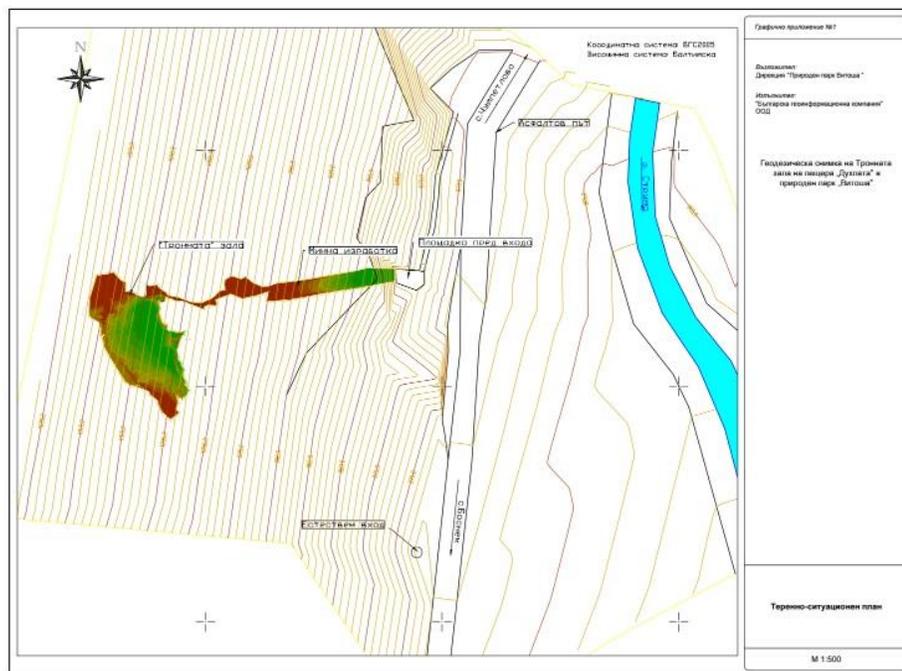
Digitization of a cave – technical process

Documentary movie about the laser scanning of the cave “Duhlata” in April 2011, filmed and edited by Asparuh Kamburov (Bulgarian geoinformation company).

Scanner: ILRIS by company Optech

Data processing software: PolyWorks.

Besides 3D model, based on the laser scanning, were elaborated several geological maps and analyzes for the cave.

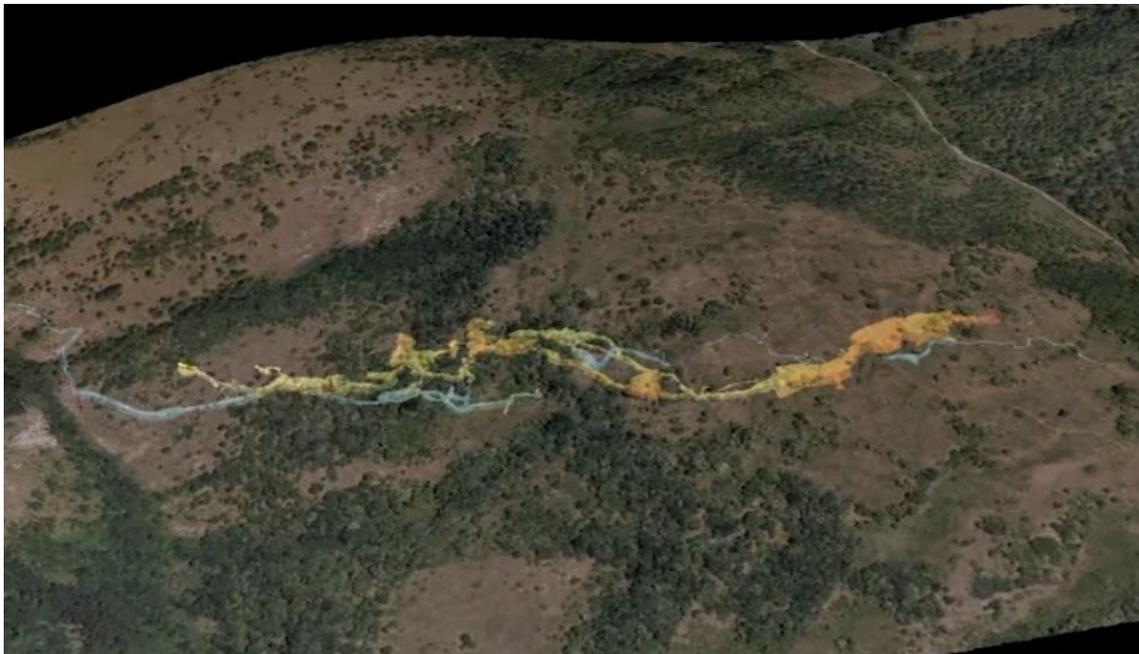


In 2013 was scanned the cave Pepelyankata (The Viper) but with mobile devices.

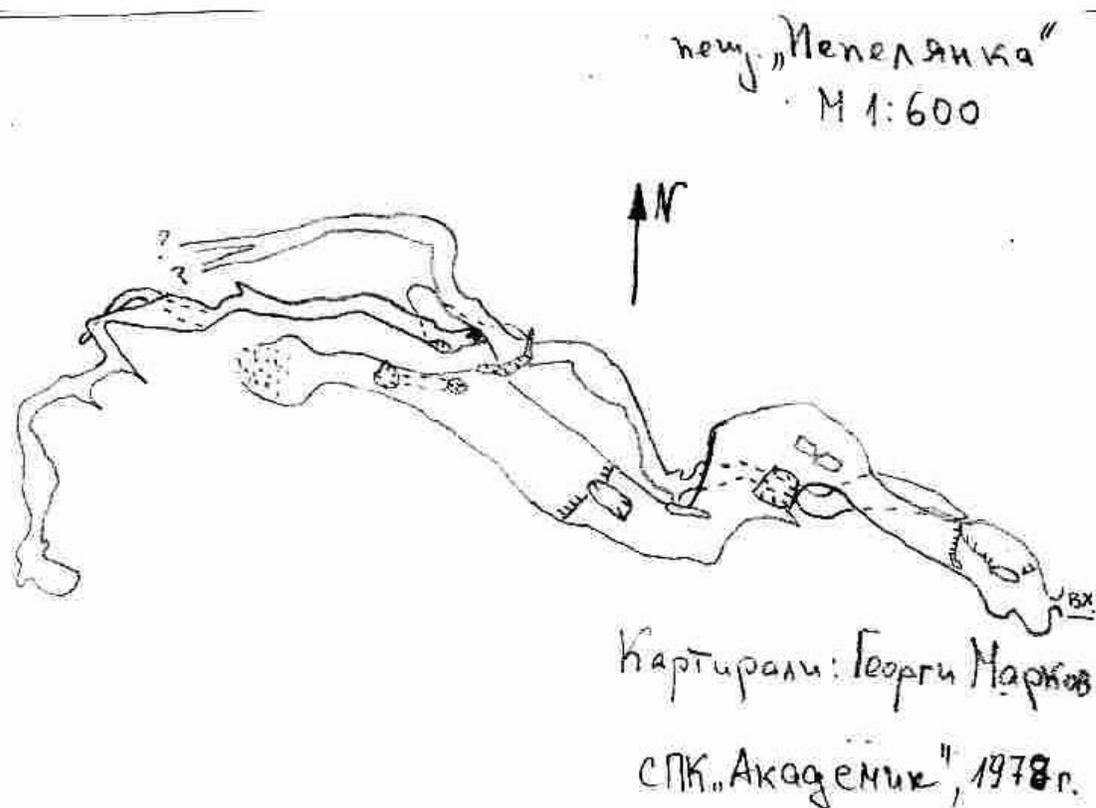
- Near to the cave Duhlata: 320 m length, 10 m depth, 2 floors

- Used devices: laser rangefinder Trimble Laser Ace 1000, mobile computers Trimble Juno SC and Trimble GeoExplorer 3000.

The data received was processed with Diga Terra Explorer Professional Software and Esri ArcGIS software.
The result is a three-dimensional model:



A comparison of maps elaborated based on manual measurements (1978) and based on scanning (2013):



Conclusion:

In general Bulgaria has all the necessary resources for digitization of natural heritage:

- High – speed internet
- Quality hardware
- Proper software
- Trained staff
- Unique nature

Is it sufficient???



<http://www.interregeurope.eu/cd-eta/>

Collaborative Digitization of Natural and Cultural Heritage



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Project summary

Digitization and digital technologies became an integral part of people's life and economy's development. However, it is acknowledged that most natural and cultural values that are unique or can actually be seen in a single place, are not subject to digitization yet. This hampers the access to

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Thank you for attention!

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