

Thesaurus: web map publishing of cultural heritage

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SUMMARY

This paper describes the process for the development of the map web site which was set up within the project “Eastern Macedonian And Thracian Electronic Thesaurus: Culture, Environment, Tourism”. Through the project Thesaurus (in short) data related to Culture, Environment, and Tourism were collected, digitized, and published on the web, alongside with proposed routes for visitors. Principal goal is the cultural and touristic promotion, exploitation and development of the region through the use of technology by providing information for the sites and proposed routes in order to visit them.

ΠΕΡΙΛΗΨΗ

Περιγράφεται η διαδικασία ανάπτυξης ενός διαδικτυακού ιστοτόπου με διαδραστικό χάρτη, ο οποίος αναπτύχθηκε στα πλαίσια του προγράμματος "Ανατολική Μακεδονία και Θράκη – Ηλεκτρονικός Θησαυρός: Πολιτισμός, Περιβάλλον, Τουρισμός". Με το πρόγραμμα Θησαυρός συλλέχθηκαν, ψηφιοποιήθηκαν και δημοσιοποιήθηκαν στο διαδίκτυο δεδομένα σχετικά με Πολιτισμό, Περιβάλλον και Τουρισμό, καθώς και προτεινόμενες διαδρομές.

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1. THE PURPOSE

This paper describes the process for the development of the map web site that was developed during the project “Eastern Macedonian And Thracian Electronic Thesaurus: Culture, Environment, Tourism” realised by the Cultural and Educational Technology Institute (CETI). Through the project Thesaurus (in short) data related to Culture, Environment, and Tourism were collected, digitized, and published on the web, alongside with proposed routes for visitors. Principal goal is the cultural and touristic promotion, exploitation and development of the region through the use of technology by providing information for the sites and proposed routes in order to visit them.

The CETI was founded in 1998 in Xanthi (Greece) as an independent research institute under the auspices of the General Secretariat for Research and Technology (Ministry of Development). In November 2003 it was integrated into the Centre of Integrated Research for the Information Society (I.R.I.S.), which in February 2006 was renamed to "Athena" - Research and Innovation Center in Information, Communication and Knowledge Technologies. The Institute constitutes an integrated research environment with continuous interaction with the academic community, in particular with the Democritus University of Thrace, the national and European educational and cultural technology industry, the international scientific community and the public sector.

The aim of the Cultural and Education Technology Institute (C.E.T.I.) is the strengthening of research and technological activities and the application of new technologies to the sectors of humanitarian science and culture and to education. More specifically, the Institute concentrates its scientific activities a) to the application of Information Technology to the study of texts, analyses, study and registry of languages, works of art, monuments etc. b) to the study of related material, particularly ceramics, paper and parchments and c) to the application of information technology to the area of Education such as Distance Learning and Education-on-Demand.



Figure 1. The web page of CETI

To achieve these objectives the Institute:

- Conducts research programs into the area of the application of new technologies to culture and education.
- Provides information technology support for scientific and developmental activities of the region by creating databases, electronic storage facilities, network connections etc.
- Provides scientific and research networks and international joint ventures with the emphasis on co-operating with academic foundations in the Balkans and Black Sea countries and for exchanging information on subjects of mutual interest.
- Collaborates with research establishments and faculties of other Universities of similar interest and particularly with all those, which are already operating in the area.
- Collaborates with technological and industrial establishments of the region and of the country in general, with the aim of coordinating research and production and the exploitation of research results.
- Provides special training for calculation and with the funding of interested organizations. It trains scientists especially in the above mentioned sectors with the organization and funding of research programs both in Greece and abroad, by conducting post graduate seminars and workshops and through various publications and presentations.
- Supports initiatives for the utilization of the position of Thrace as the meeting point and the South-Eastern gate of the European Union to the Balkans and the Black Sea.
- Undertakes initiatives for keeping up-to-date the scientific manpower of Thrace.
- Can take part in any enterprise by producing products or providing services for sectors relevant to its aims.

- Collaborates both within Greece and abroad with experts and organizations specializing on topics relevant to its activities, with the purpose of the advancement of its objectives, and if needed, subcontract them for research topics of special interest.

To the above ends, it tries to create the necessary technical infrastructure and to attract experienced scientists. Its objective is to create high technology laboratories (multimedia, distance learning, archaeometry e.t.c.). In the past the main emphasis was placed in the creation and operation of the Multimedia Laboratory and the Archaeometry Laboratory. In the interests of the Institute are increasingly included the Geographical Information Systems.

The region of Eastern Macedonia and Thrace, which comprises of 5 prefectures and their respective capital cities Alexandroupolis, Komotini, Xanthi, Drama and Kavala, is still touristically underdeveloped. Well known in the ancient world for its vegetation, especially the vegetation alongside the rivers and in the forests, has served as crossroads between Europe and Asia. The promotion of the region will result to increased competitiveness and touristic visits as well as to development of special types of tourism.

2. THE PROCESS

In the attempt to incorporate more actively the GIS technology in the technologies already in use by the institute, project Thesaurus was a turning point as it was the first project that involved web publication of interactive maps. Spatial data existed in CAD format and in Arcview format, a widely used GIS software in the recent past. The goal was set to publish part of these data on the web through project Thesaurus. This project was not about GIS so the main activity and resources regarded the compilation of the site catalog. Initially a textual web publishing form was selected which dictated the data model. For this reason the model was not altered later, although it was not deemed optimal for the GIS. The GIS application was created using few resources of the project, but it delivered a result which is already on the web.

The collected data for that project concerned over 1.000 places of interest such as archeological sights, monuments, museums, places of worship, information points and so on. These information on each place of interest are kept in a non spatial database and are updated with the utilisation of forms. Out of these places about 500 were selected for display on maps. Paper maps were produced per prefecture as well as a GIS mapping application that was published on the internet.

1. Culture

1.1. Archeology

1.1.1 Archeological site

1.1.1.1 Forum

1.1.1.2 Theatre

- 1.1.1.3 Shrine
- 1.1.2 Monument
 - 1.1.2.1 Church
 - 1.1.2.2 Castle
 - 1.1.2.3 Bridge
 - 1.1.2.4 Macedonian Tomb
- 1.2 Architecture
 - 1.2.1 Neo-classical
 - 1.2.2 Traditional

Table 1. An example of the hierarchy of the categories

The data for the sites were collected from various sources and were stored in a MySQL database. The database design includes information on each site, and metadata. The design also includes support for multimedia and geographic location in textual form. The data collected concerned four main categories which are: environment, tourism, culture and economy. Each category is subdivided to more detailed categories. This continues up to a fourth level of subcategories. This allows for differentiated levels of detail. For example a complex site which does not belong to only one detailed subcategory can be classified at top level as Environment (alternatively more than one records have to be created one for each subcategory) while another site which more clearly belongs to a more detailed category, for example a specific type of plants in an area, can be classified at lower level category as Vegetation, which is a subcategory of Environment. Despite the fact that the sites are classified at different levels we can easily use this hierarchy to view them grouped together with very simple SQL queries. In the above example a query about environment sites will return both sites.

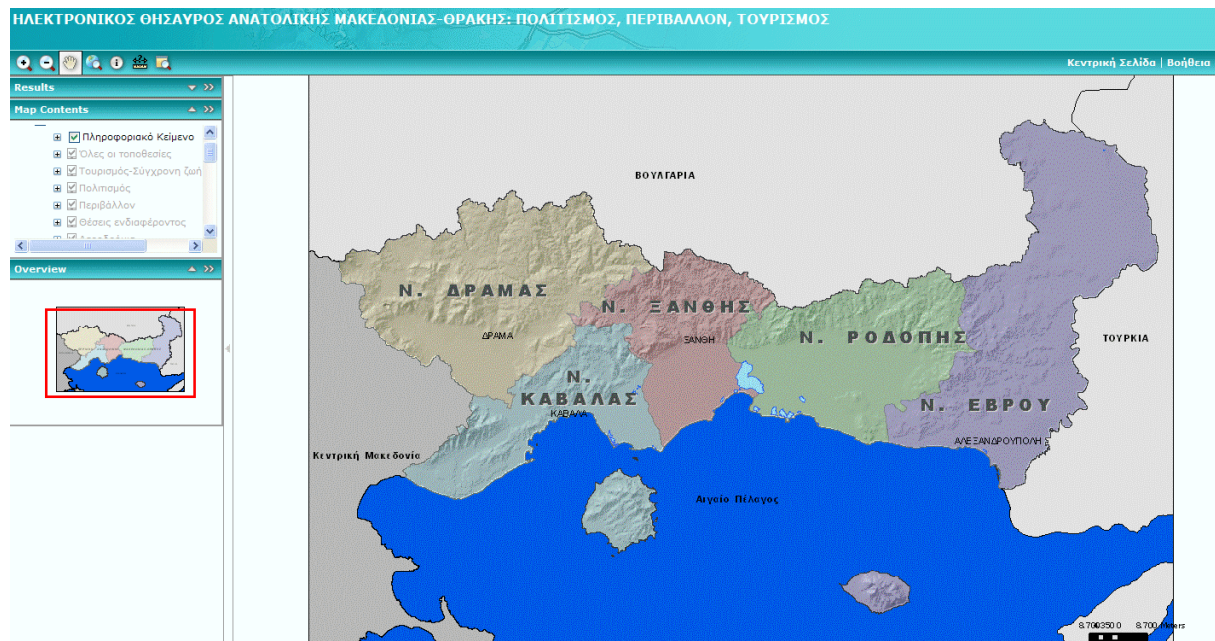


Figure 2. The start page of the web GIS

The digital background originated from the 1:50.000 map series. This is the most complete mid-scale map series in Greece. The spatial datasets were generalised for better performance on the web at the small scales. A 3D terrain representation was created for visualization purposes. The full detail overloads the maps at small scales, so more generalized views were set up for smaller scales. The detail gradually increases as one zooms in the map. This detailed representation regards not only the background data, but mainly the sites of interest. This is essential as many sites inside urban areas are in a very close vicinity. In this case a single symbol represents many sites. At larger scales the symbols "split" and are presented with differentiated mapping symbol. The scales range from 1:50.000 to 1:1.000.000.

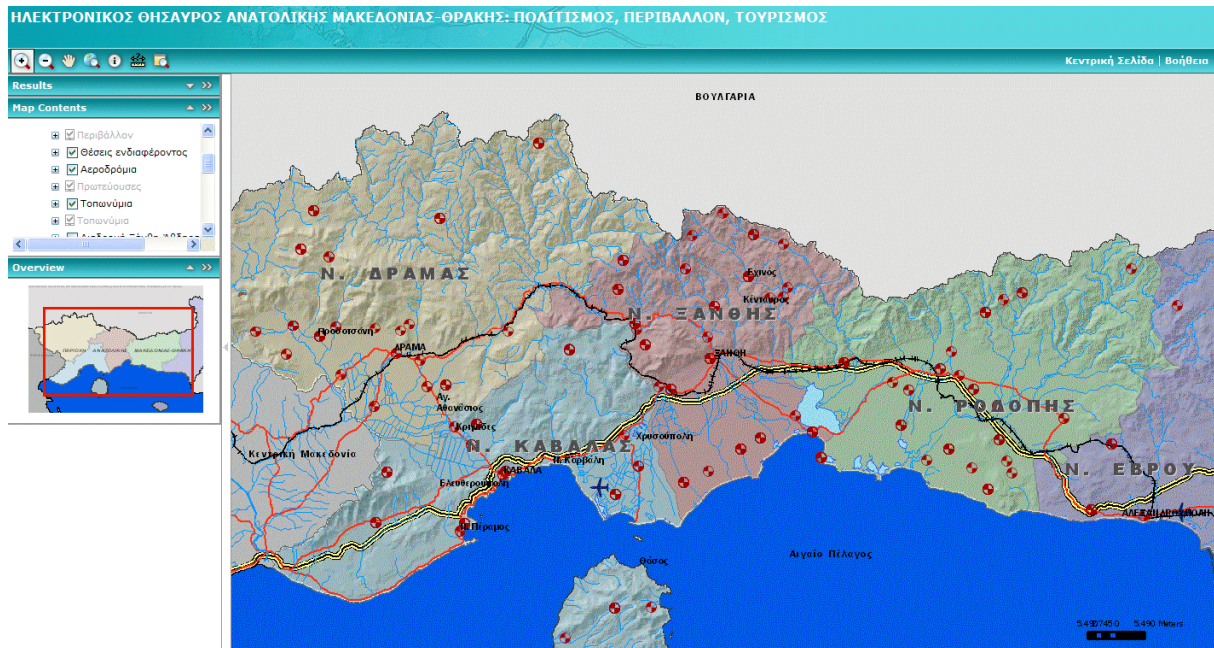


Figure 3. The map at a small scale

A map server GIS software was set up which enables a web visitor to view the map without the need for special software, but only a typical web browser. In the map are also included proposed routes for a visitor in the area. These are locally focused or thematic routes. These routes are to be enriched and specialized further. The resulting map of the project was added to the website of the institute and is available at <http://www.ipet.gr/thesaurusii>.

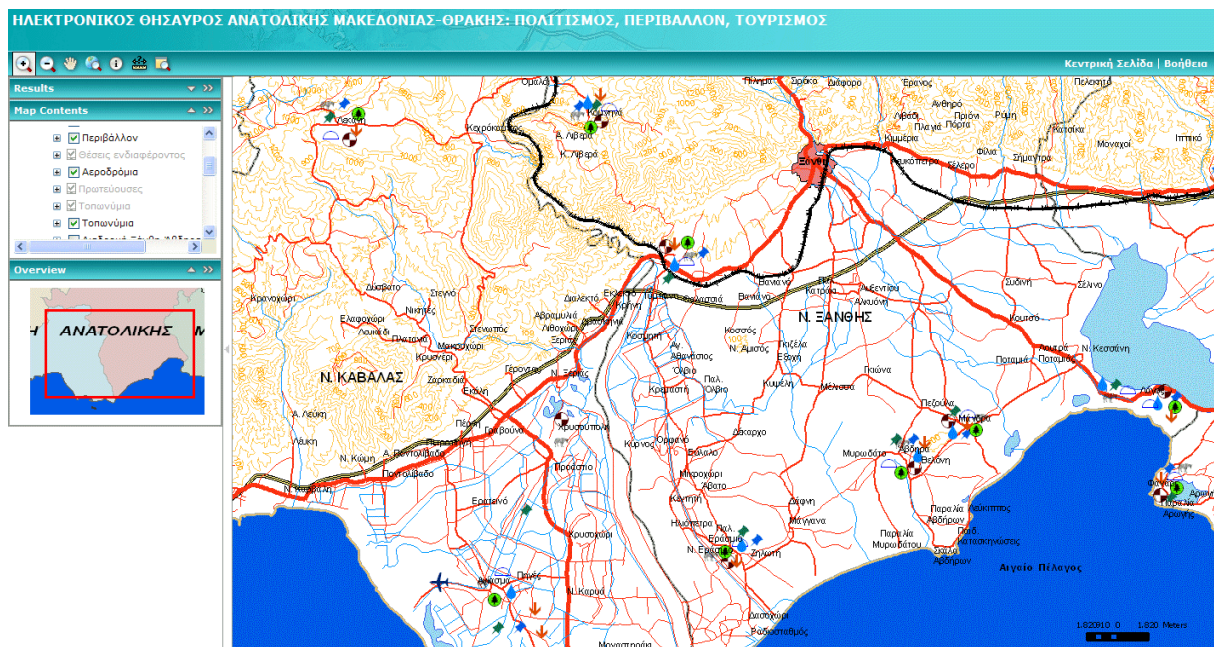


Figure 4. The map at a larger scale

The other issue of importance is the suggested routes that a visitor can select in order to visit sites that are of interest. The total number of available sites makes it possible to propose many different routes regarding the area visited and the interests of the visitor. Geographically there the choice of the area to visit which is especially binding in the case of the islands. Island of Thasos and especially island of Samothraki, with some very interesting places to visit, demand at least a whole day and probably an overnight stay. In these cases the visitor has ample time for visiting multiple sites. Other areas offer greater spatial flexibility (especially with the new Egnatia Highway) and the visitor has the option to visit sites as long distances within a short time. This means that thematic excursions (such archeological or religious) are feasible and can attract people interested in them. Also new activities are being set up as the newer form of tourism (such as ecotourism, extreme sports) have a great potential.

The above routes can be realised in two ways. First a set of proposed routes can be created in order to guide the visitor that needs assistance in the selection of the places to visit. The routes will be "geographic", i.e. focusing a specific area, and "thematic", i.e. focusing a specific category of sites. What has not been done so far is the evaluation of the sites in order to make these routes available. However three general routes have been included in the web map which are widely accepted as interesting. The second approach is the selection of sites, also the resulting route by the visitor himself. This has not been designed yet to be incorporated.

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