Development of Internet Application of Landscape Atlas of the Slovak Republic at the Slovak Environmental Agency

Martin Koška

Abstract

Landscape Atlas (LA) of the Slovak republic was developed in the frame of a governmental project supported by the Ministry of Environment. It was finished in 2002. It consists of a book of 428 map compositions in nine chapters, GIS desktop version, and DVD film. It contains integrated information about the constants of landscape, the inanimate components of nature, and about land use. The team of the Department of Informatics at Slovak Environmental Agency (SEA) decided to develop a system which allows a wide audience access to this complex information by internet browser. This online application of LA is a unique integration of GIS power, dynamic map publication system and Internet application.

1. Interface of Landscape Atlas online application

Interface of LA application is adapted to the interface of Enviroportal webpage, into which it has been incorporated. It is divided into the 6 following frames:

1. Top frame: graphic frame which presents LA as part of the Enviroportal webpage.

2. Tool and Selection frame: operational frame which includes following tools for working with map compositions: zooming tool (in, out, all, previous extent); panning tool; identifying tool; selection of view (legend of the map, layers, photos, information about map composition); selection tools (find by title, find by author), zoom to district or region; zoom to different scale (1,000,000, 500,000, 100,000, 50,000); special tools (refresh image, get original image).


4. Listing frame: list of all compositions with title, authors and scale.

5. Frame of additional items: user has the possibility to choose view of map layers, map legend, map photos, information about the map.

6. Result and search frame: frame which displays selected information and allows full text searching of map compositions according to title and author.

1 Slovak environmental agency, Tajovskeho 28, 975 90 Banska Bystrica, Slovakia, email: koska@sazp.sk, Internet: http://www.sazp.sk
2. Users

Internet application of Landscape Atlas of Slovak Republic is intended for wide spectrum of different users. User-friendly interface is easy to operate for wide public as well as for experienced GIS users, professionals, academics and students. It is a great tool how to access overall geographic information about Slovakia for free. Clients only need an Internet browser.

3. Architecture and used technologies

A new technology, which is developing very fast, is used for the development of the LA web application. The development of this application is a complex procedure, which requires teamwork of several development teams and harmonization of several developing environments. The module for presenting geographical data sets is built on an ESRI platform. The GIS Module, which produces map compositions, is based on ArcView GIS. It provides almost ideal possibilities of representing geographical elements in the landscape. The Map Compositions Publication Module is based on ArcIMS. ArcView project files are used as configuration inputs for ArcIMS Image server (ArcMap extension, which produces internet online...
maps). The Logical Selection Module, which is stored in an Oracle database, allows the following selection: map composition, information about map composition, photos. The Internet Application Module is based on PHP, HTML, JavaScript. PHP is used for functionality of application. It allows connection between client, ArcIms and Oracle database. JavaScript is used for interaction between client (browser) and Map (GIS functions, selections...).

Fig. 1: Example of published map composition
Source: http://www.enviroportal.sk/atlas/atlassr

4. Future prospects and guaranteed results

Development team of SEA Informatics Department has already finished the programming part of the application and most of the chapters of LA. At the end of the year 2005, more than 400 map compositions of LA will be easily accessible. Users can access the WEB application by means of URL address http://www.enviroportal.sk/atlas/atlassr, which is operated by SEA.