

THESIS (DIPLOMA)
for Mr. Dirk Waldik

Topic: An Internet drafted conception and realization of an interactive instruction and learn module on the theme of GIS for the virtual university

Introduction

In the context of the technological development, modern information and communication technology and especially because of constantly better data capture, data processing, data analysis and data visualization information systems and particularly geographic information systems (GIS) achieve an continually greater importance. GIS today belongs to the growth markets of the information society (for example as land information systems, environment and disaster information systems, systems for geo marketing, navigation systems). Thereby a cartographically relevant question is above all the visualization and presentation of GIS information.

These days in teaching the didactically correct conversion of textual and technical subjects experiences large modifications. This is shown towards the increasing application of the Internet in the context of the pilot schemes to the virtual university. The pilot scheme for development and didactical editing of teaching materials for the virtual university at the University of Technology Karlsruhe is supported by the working group LARS (achievement-oriented benefit systems in teaching) and the Ministry for Science, Research and Culture of Baden-Wuerttemberg. The thesis (diploma) is constituent of this pilot scheme. The module of a virtual GIS teaching frame offers the ideal opportunity to present GIS contents didactically correct in a world-wide, interlaced and available medium.

Function

In co-operation with the University of Potsdam and most probably with an University in Australia, a virtual GIS syllabus in English is to be conceived, implemented and tested. For this purpose, the rudiments of GIS, which delineate the necessary, substantial teaching syllabus, should be compiled. The syllabus or subject-matter should be didactically transferred, visualized and presented on the communication platform of the Internet. Based on the complexity of a GIS example, a GIS manager should be trained either through self-study or in the course of a learn-programme. He should learn to perceive the radius of such a project.

For this it is necessary:

- (a) to create a market analysis over GIS and available, didactical, virtual teaching building blocks,
- (b) to work out a textual concept that the didactical request of an interlaced, platform-independent information use and processing (clear interactive navigation, self-describing interface, connection to a data base, integrable in a superordinated system) becomes equally fair,
- (c) to make a selection of methods in GIS and process these,
- (d) to develop a sideorientated design of the screen display, to visualize and transfer the GIS module into an online prototype,
- (e) to demonstrate the exemplary integration of map, graphic, picture, text, tone, simulation, animation and video in Netscape Communicator/MS Explorer. The standardized programming languages html, cgi, Perl and JavaScript are to be partial documented.

Final product

Describing text and colour prints in the format Adobe PDF, conception of the system and online integration.

Period of research: 6 months

Thesis given on: 01. September 1999

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