



about the presence of technique in the publications of Lexicographical Institute Miroslav Krlježa, and MSc. L. Majetić spoke about this attitude towards the school

system as the generator of non-technological sterile opinion. Dr. R. Marinković was supposed to hold the lecture on the technique in high quality education, but could not take part at the gathering for health reasons.

In the last group of reports, *Technique in Application*, there were also four presentations having a common feature in presenting the development of single areas. Prof. Dr. M. Hraste presented the development of the chemical engineering, M. Smokvina, BSc., the torpedo factory in Rijeka, Prof. Dr. Z. Benčić mercury period of effective electronics in Croatia (1949-1968) and Prof. Dr. S. Frangeš the development of technique in the production of topographic maps in Croatia.

The whole conference, although organised on a very high level, with very interesting topics and presentations, gathered unfortunately only about 50 participants. It does not predict better days for the future of technique in Croatia, at least not for some of its segments.

Miljenko Lapaine, Stanislav Frangeš

Advanced GIS Modeling

Zagreb, 31 January - 12 February 2005

A ten-day intense GIS course *Advanced GIS Modeling*, organized by the *Institute for Melioration of the Faculty of Agriculture of the University of Zagreb* and *AGIS Centre of the Faculty of Agriculture, University in Osijek*, was held from 31st January till 12th February 2005 at the Faculty of Agriculture in Zagreb

The coordinator and chief organizer of the course was Assist. Prof. Dr. Tomislav Hengl, who tried to share his experience from the *International Institute for Geo-Information Science and Earth Observation (ITC)* in the Netherlands, where he completed his graduate studies, got his PhD and earned the title *GIS Specialist*.

Unlike similar courses organized so far, this one was intended for young researchers who lack basic knowledge of advanced GIS modeling, mainly for the teaching assistants and graduate students, but also for everyone interested in GIS tools use in natural resource management and research.

Besides using GIS packages, the course dealt with subjects such as: satellite imagery processing, process modeling in GIS, orthophoto design, integration of GPS and GIS, relief modeling. The topics were chosen by the participants of the course through a survey.

Here is a typical workday at the course:

09:00-10:00 – Introductory theoretical lecture
 10:00-10:30 – Break
 10:30-12:00 – Lecture, part two
 13:30-14:30 – Demonstration - Case Study

14:30-16:00 – Individual work under the supervision of the coordinator
 16:00-17:00 – Additional questions and discussion.

The major part of the exercises was done in ILWIS. *ILWIS* is the abbreviation for *Integrated Land and Water Information System*, and it is an integral GIS package, designed specifically for the needs of research projects and education.

ILWIS was developed by the ITC team, and more about it can be found at their official web-site: <http://www.itc.nl/ilwis/>

The programme has become shareware in 2004, and it is available at the symbolic price of 100 €, so considering the possibilities the package offers and its reasonable price, it is highly recommended for use in class and for various GIS-analyses.

Besides ILWIS, the participants were acquainted with other GIS packages (ArcGIS, Geomatica, Idrisi, GrassGIS, Erdas Imagine) and specialist packages (ArcView, Gstat, VESPER and SaGa).

On Friday afternoon the workshop was organized so that the participants could present the problems they came across when processing data in GIS. Participants could offer their suggestions and solutions, and share their previous experience with similar problems. The aim of the workshop was to practice communication about GIS-related problems and to learn how to prepare project

Tehničkog muzeja u očuvanju i predstavljanju tehničke kulture. Mr. sc. T. Krčmar govorio je o prof. Boži Težaku i njegovoj djelatnosti vezanoj uz Tehnički muzej. Prof. dr. sc. M. Lapaine u svom je izlaganju objasnio značenja riječi tehnika, a prof. dr. sc. I. Čatić održao je predavanje o budućnosti tehnike.

U skupini referata pod zajedničkim naslovom *Tehnika u školstvu i nakladništvu* bila su četiri izlaganja. J. B. Malinar dao je pregled razvoja nastave tehničke kulture u osnovnim školama u Hrvatskoj tijekom proteklih pola stoljeća. Prof. dr. sc. A. Markotić izlagao je o tehnici i mladima. Mr. sc. Z. Jecić prikazao je svoje istraživanje o zastupljenosti tehnike u izdanjima Leksikografskog zavoda Miroslav Krleža, a mr. sc. L. Majetić iznio je svoje stavove o školskom sustavu kao generatoru netehnološkoga jalova mišljenja. Dr. sc. R. Marinković trebala je održati predavanje o ulozi tehnike u kvalitetnom

obrazovanju, no nije mogla sudjelovati na skupu zbog zdravstvenih problema.

U posljednjoj skupini referata, *Tehnika u primjeni*, bila su također četiri izlaganja za koja je zajedničko to što su dala prikaze razvoja pojedinih područja. Tako je prof. dr. sc. M. Hraste prikazao razvoj kemijskog inženjerstva, M. Smokvina, dipl. oec., riječku tvornicu torpeda, prof. dr. sc. Z. Benčić živino doba učinske elektronike u Hrvatskoj (1949-1968), a prof. dr. sc. S. Frangeš razvoj tehnike izrade topografskih karata u Hrvatskoj.

Cjelokupni skup, iako organiziran na visokoj razini, sa zanimljivim temama i prezentacijama referata, okupio je na žalost tek 50-ak sudionika. To za budućnost tehnike u Hrvatskoj, barem nekih njezinih segmenata, ne pretskazuje bolje dane.

Miljenko Lapaine, Stanislav Frangeš

Napredno GIS-modeliranje

Zagreb, 31. 1. - 12. 2. 2005.

U organizaciji Zavoda za melioracije Agronomskog fakulteta Sveučilišta u Zagrebu i Centra AGIS Poljoprivrednog fakulteta Sveučilišta u Osijeku, od 31. siječnja do 12. veljače 2005. godine, na Agronomskom fakultetu u Zagrebu, održan je desetodnevni intenzivni tečaj *Napredno GIS-modeliranje*.

Voditelj i glavni organizator tečaja bio je doc. dr. sc. Tomislav Hengl, koji nam je pokušao prenijeti svoja iskustva iz ITC-a (*International Institute for Geo-Information Science and Earth Observation*) u Nizozemskoj gdje je završio poslijediplomski studij, doktorirao, te stekao zvanje *GIS-specijalist*.

Za razliku od sličnih, do sada organiziranih tečajeva, ovaj je bio namijenjen mladim istraživačima kojima nedostaju temeljna znanja za napredno GIS-modeliranje. Dakle, prvenstveno asistentima i polaznicima poslijediplomskog studija, ali i svima koji su zainteresirani za primjenu GIS-alata u gospodarenju prirodnim resursima i istraživanjima.

Osim rada u GIS-paketima, na tečaju su obrađivane i teme poput ovih: obrada satelitskih snimaka, modeliranje procesa u GIS-u, izrada ortofota, integracija GPS-a i GIS-a, modeliranje reljefa. Odabir tema, obavili su polaznici tečaja popunjavajući anketu.



The participants of the course "Advanced GIS-modelling"
Polaznici tečaja "Napredno GIS-modeliranje"

Tipičan radni dan tečaja izgledao je ovako:

09:00-10:00 – uvodno teorijsko predavanje,
10:00-10:30 – pauza,
10:30-12:00 – drugi dio predavanja,
13:30-14:30 – demonstracija – studij slučaja (case study)
14:30-16:00 – samostalni rad uz obilazak voditelja
16:00-17:00 – dodatna pitanja i diskusija.

Najveći dio vježbi izvodio se u ILWIS-u. *ILWIS* je skraćenica za "Integrated Land and Water Information

documentation in which the use of GIS tools is one of the important elements.

Dr. Tomislav Hengl, as course coordinator, gave the majority of the lectures and held all the exercises. Besides him, there were three very interesting lectures by visiting lecturers. *An Overview of GIS-Use in the Republic of Croatia* by Dr. Vladimir Kušan of OIKON, *Trends in Remote Sensing (hyperspectral imagery, image fusion, 3D drapes)* by Dr. Stephan Gruber of *Physical Geography Division, University of Zurich, Switzerland*, and Dr. Gerard Heuvelink of *ALTErra, Wageningen University and Research Centre, The Netherlands*, gave an especially interesting lecture titled *Spatial Prediction (sampling, interpolation and validation)*.

The participation fee of 1 450,00 Kn covered the expenses of course organization, the costs of the material preparation, a CD-ROM with the programmes and exercises for practice, the necessary literature, and refreshments during the breaks.

The course was attended by 19 participants, the majority of which from the Faculty of Agriculture, which was the host of the course, and from Papuk Nature Park and Učka Nature Park, Faculty of Traffic Engineering and Transport Studies, Institute of Biology from Osijek, Institute of Geology in Zagreb and myself, from the Faculty of Geodesy.

The last day of the course we completed a questionnaire and gave our opinions about the course. Although the majority of the participants were satisfied by the course, the materials and the choice of topics, I would point out that the shortcoming of the course was the lack of time for a very large number of topics and the presentations were too quick.

A group photo eternalized our intense ten-day GIS-gathering, the regular participants got diplomas, and the *Happy hour* lasted far into the night.

According to www.hengl.pfos.hr the next similar course is planned for February 2006, which comes with my highest recommendation.

Vesna Poslončec-Petrić

Student Practice

Student practice was organized by the Institute of Cartography at the Faculty of Geodesy, University of Zagreb, and it was planned and performed in October 2004. In the first part of the practice, students were collecting field data and in the second they were processing the same data on a computer. One student group carried out their fieldwork at the island of Hvar and the second group at the eastern part of the Medvednica Mountain.

Assignment for students in Hvar was to collect and process spatial and attribute data in the city of Hvar on the island of Hvar (Fig. 1), with a version of thematic map of communication roads and characteristic objects. Prof. Dr. Miljenko Lapaine was our mentor.



Fig. 1. View of a part of the city Hvar at the island of Hvar
Slika 1. Pogled na dio grada Hvara na otoku Hvaru

Assignment for praxis at the part of the Medvednica was field surveying with evaluation and supplement for topographic map at the scale of 1:25 000, with processing of collected data. Prof. Dr. Stanislav Frangeš was our mentor.

Both student groups were divided in terms of two. Every team used one GPS device for field survey (Figure 2) and a mount for terrain sketch. At Medvednica the mount sketch was a topographic map, while on Hvar it was a city plan.

Hvar, October 11-15, 2004

Students travelled to Hvar by cars and from Split by ferry to the city of Starigrad at the island of Hvar, and again by cars to the city of Hvar. Accommodation was provided in chambers inside the Astronomical Observatory.

Good weather is desirable for the purpose of surveying and fieldwork. In the moments of bad weather, students visited a few sites of cultural and historical heritage:

- Villa of Hanibal Lucić
- Museum of Hvar Diocese
- Cathedral of St. Stephen
- Benedictine Monastery
- Hvar theatre (oldest folk theatre in Europe)
- Fortress Fortica (Španjola)
- Franciscan Monastery

System", integralni GIS-paket specifično dizajniran za potrebe istraživačkih projekata i edukaciju.

ILWIS je izradio tim ITC-a, a više o programu može se saznati putem službene web adrese: <http://www.itc.nl/ilwis/>

Program je od 2004. godine prešao u *shareware*, i dostupan je po simboličnoj cijeni od 100 €, a s obzirom na mogućnosti samog paketa, i relativno pristupačnu cijenu, sigurno je preporuka za korištenje kako u nastavi, tako i za razne GIS-analize.

Osim ILWIS-a polaznici su bili upoznati i s drugim GIS-paketima (ArcGIS, Geomatica, Idrisi, GrassGIS, Erdas Imagine) i specijalističkim paketima (ArcView, Gstat, VESPER i SaGa).

Petkom poslijepodne organizirana je radionica u sklopu koje su polaznici tečaja prezentirali probleme na koje nailaze u obradi podataka u GIS-u, a ostali polaznici tečaja davali su svoje prijedloge i rješenja, te prenosili svoja dosadašnja iskustva sa sličnim problemima. Cilj radionice bio je vježbanje komuniciranja o GIS-problemima, te naučiti izrađivati projektnu dokumentaciju u kojoj je jedan od važnih elemenata primjena GIS-alata.

Tomislav Hengl je, kao voditelj tečaja, održao i najveći dio predavanja i sve vježbe. Osim njega, imali smo i tri izuzetno zanimljiva predavanja gostiju predavača. *Pregled uporabe GIS-a u Republici Hrvatskoj* dao je dr. Vladimir Kušan iz OIKON-a, *Trends in remote sensing (hyperspectral imagery, image fusion, 3D drapes)* održao je dr.

Stephan Gruber sa *Physical Geography Division, University of Zurich, Switzerland*, dr. Gerard Heuvelink iz *ALTErrA, Wageningen University and Research Centre, The Netherlands*, održao je posebno zanimljivo predavanje *Spatial prediction (sampling, interpolation and validation)*.

Kotizacija u iznosu 1450,00 kuna pokrivala je troškove organizacije tečaja, troškove pripreme materijala, CD- a s programima i zadacima za vježbu, potrebnu literaturu, te kave i sokove kojima smo se osvježavali u pauzama.

Tečaju je prisustvovalo 19 polaznika. Najveći broj polaznika došao je s Agronomskog fakulteta koji su ujedno bili i domaćini ovog tečaja, zatim iz JU Park prirode Papuk i JU Park prirode Učka, Fakulteta prometnih znanosti, Zavoda za biologiju iz Osijeka, Instituta za geološka istraživanja iz Zagreba i naravno ja, s Geodetskog fakulteta.

Posljednjeg dana tečaja ispunili smo upitnik i izrazili svoje mišljenje o tečaju. Iako je većina sudionika bila veoma zadovoljna tečajem, pripremljenim materijalima i odabirom tema nedostatak tečaja je prekratko vrijeme za izuzetno velik broj tema i prebrze demonstracije.

Naše intenzivno, desetodnevno, GIS-druženje uvijekvećili smo prigodnom zajedničkom fotografijom, redoviti polaznici tečaja dobili su diplome, a «Happy hour» se produžio do dugo u noć.

Prema, www.hengl.pfos.hr, sljedeći slični tečaj planiran je za veljaču 2006., a moju preporuku imate.

Vesna Poslončec-Petrić

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