

**CARTOGRAPHIC SOCIETY OF THE SLOVAK REPUBLIC
ACTIVITIES 2003-2006**



National Report for the 14th General Assembly of the ICA

Bratislava 2007

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The Cartographic Society of the Slovak Republic Activities 2003-2006

The function of the Cartographic Society of the Slovak Republic as an apolitical organisation is to associate technical or science university graduates who are interested in cartography. Their primary task is to model landscape elements, to retrieve and process cartographic information, to participate on the development of cartography as a science, to improve technological conditions of the processing of cartographic data, to educate new professionals in the field of cartography, and to provide a historical cartographic research.

The Cartographic Society of the Slovak Republic is a permanent member of the International Cartographic Association (ICA), and it provides cooperation with this institution via its members. It coordinates cooperation of its own members, who are at the same time the members or corresponding members of the individual commissions of ICA. It is important to highlight the regular and successful participation of Slovaks in Barbara Petchenik Children's Map Competition, or the contribution to publications edited by ICA commission for Mapping from Satellite Imagery.

The dominant role of the Cartographic Society of the Slovak Republic is the organization of special conferences focussed on cartography and the publication activity in the field. The Cartographic Society of the Slovak Republic together with the Institute of Geography of the Slovak Academy of Sciences publishes the year book of the Society *Kartografické listy (Cartographic Letters)*, which had already its 14th volume in 2006.

I. Special Cartographic Events in Slovakia in 2003-2006

1. *The 15th Joint Slovak and Czech Cartographic Conference in 2003*. It was held in Zvolen, the central motto being 'Geoinformation of Cartography'. The conference focused on the following topics: the cartographic theory and terminology, the current trends in cartography, cartographic informational sources, digital mapping, and visualization of geoinformation.

The conference inspired the publication of three following special documents: Abstracts, the journal *Geodetický a kartografický obzor* dedicated to the themes covered on the conference, and the year book of the Society *Kartografické listy*.

The participants of the conference adopted the following recommendations:

- to participate on the creation of standards for geographic information and terminology,
- to help launch and develop information technologies necessary in the technological process of cartographic data processing and utilization,
- to initiate a legislative authority for cartographers in the Chamber of Surveyors and Cartographers,
- to continue in active cooperation between Slovak and Czech Cartographic Societies.

2. *Seminar 'Activities in Cartography 2004'*. The seminar took place in Bratislava and was a result of fruitful cooperation between the Cartographic Society of the Slovak Republic and the Institute of Geography of the Slovak Academy of Sciences. It was already the sixth seminar in line; they are organized in two years' span. The purpose of the seminar was to enable the presentation of the information on cartographic activities to other scientists and experts besides the cartographers. It is inevitable that there is a high degree of mutual information in the field of map design among various (not only scientific) institutions, because many of these institutions interpret the results of their research in the cartographic form.

The seminar confirmed that the interest in this kind of events rises every year, which supports the fact that even the difference of processed information finds a common output, which is a map.

3. *The Scientific Conference 'Historical Maps in 2005'*. The Cartographic Society in cooperation with the Slovak National Museum in Bratislava organized already the fifth scientific conference 'Historical Maps'. It focused on the evaluation of historical maps as a part of the Slovak cultural heritage and on considering the possibilities of utilization of this heritage for the development of the cartography in the following period. The part of the conference was also an exhibition 'Slovakia on Maps in the 16th-20th Century'. Its main goal was to inform the public about the cartographic past of Slovakia. Abstracts of the conference were published.

4. *The 16th Joint Czech and Slovak Cartographic Conference in Brno in 2005*. In cooperation with the Cartographic Society of the Czech Republic the 16th Cartographic Conference was held in Brno, its central motto being 'Map in the Information Society'. The conference focused on the following topics:

- visualization of the spatial data, cartographic technologies, standardization and legislative in cartography, theoretical cartography, education in cartography, thematic cartography and its applicable aspects. The part of the conference was the exhibition of cartographic publishing houses, universities, and research institutions.

In the closing of the conference the following recommendations were adopted:

- to support cooperation with the commissions of ICA,
- to set objectives for the methodology of visualization of geoinformation,
- to continue with the engagement in the problem of standardization, with an aim to provide geoinformation via web services,
- to support the cooperation of Czech and Slovak cartographers.

The participants of the conference were given the Proceedings on CD-R, the collection of abstracts, the journal *Geografický a kartografický obzor* and *Kartografické listy* dedicated to the issues of the conference.

5. *Seminar Activities in Cartography 2006*. The Cartographic Society of the Slovak Republic and the Institute of Geography of the Slovak Academy of Sciences organized already the 7th seminar *Activities in Cartography*. Similarly as at the previous seminars, also this seminar offered space for the presentation of the results of the research activities of universities and institutes of the Slovak Academy of Sciences, as well as of other institutions which present the results of their research in form of maps despite they do not represent professional cartographic workplaces. Abstracts of the seminar were published.

II. The Education of Cartographers

In the Slovak Republic, the education of professional cartographers with a university education is provided in two basic models:

- natural sciences model with a geographic-thematic orientation of instruction,
- technical model with a geodetic-topographic-technological orientation of instruction.

Cartography as a core science intertwines with problematics of geoinformatics, geoinformation technologies, computer cartography, and remote sensing. The university education is, as provided by law, two-tier:

- 1. tier - the length of the study is 3 years. Graduates are awarded the Bachelor's degree (Bakalar – Bc.). Yearly, about 200 students are awarded the degree.
- 2. tier - the length of the study at the universities teaching natural sciences or humanities is from 2 to 3 years. Graduates are awarded the Master's degree (Magister – Mgr.). Yearly, about 30 students are awarded the degree;
 - the study at technical universities lasts from 2 to 3 years. The graduates are awarded the Master's degree (Inzinier – Ing.). Yearly, about 70 students are awarded the degree.

In 2004-2005 new cartographic study programmes at both technical and science universities were created in accordance with the University Law, and they were accredited by the Accrediting Commission of the Government of the Slovak Republic. New graduates of these accredited programmes, which encompass the current knowledge from cartography and the related disciplines, are expected in 2008.

Postgradual study is assigned for the graduates with the titles Mgr. or Ing., and it lasts 3 years. It is composed of lectures, seminars, internships (also abroad), and exams. It ends with a successful defending of Dissertation, which should prove the dissertant's abilities to conduct research work. Graduates are awarded the title philosophiae doctor (PhD.). Yearly, about 5 graduates are chosen for the postgradual study.

In the Slovak Republic, the education of cartographers is carried out at 3 universities with technical orientation and 4 universities with orientation on humanities or natural sciences.

III. Cartographic Research

In Slovakia, the research in the field of cartography is concentrated at the universities (the Faculty of Civil Engineering of the Slovak Technical University in Bratislava, the Faculty of Natural Sciences of Comenius University in Bratislava) and at the Slovak Academy of Sciences – the Institute of Geography in Bratislava.

The Faculty of Civil Engineering of the Slovak Technical University

The scientific research in the period was concerned with two dominant issues:

Cartographic modelling of geoinformation in GIS environment:

The aim of the project was to study possibilities of cartographic modelling of geobjects by means of GIS technologies. The starting point is the existing spatial database, which meets requirements of the optimal structure. The requirement of the analogue output from the spatial database in form of thematic maps presupposes necessity to respect the rules of cartographic generalisation using adequate cartographic interpretation.

Standardization and interoperability of geographic information:

The adoption of standard solutions is becoming the essential condition for effective functioning of information systems. ISO/TC211 Geographic information/Geomatics creates a structured file of standards for information about objects. Standards and regulations' data have to be created for all stages of the process of creation of spatial information databases.

The OPEN GIS problematics is tightly related to new trends in the field of the application of geographical data, which helps increase their value. Open Geospatial Consortium supports creation of interoperable environment for work with spatial data.

The Faculty of Natural Sciences of Comenius University

The research was concerned with the following issues:

- the instruments for integration and distributed application of geospatial information,
- the standardization of geographic information, their processing, and providing by means of web services.

The interpretation of the real boundaries of the use of agricultural land and of selected elements of agricultural landscape on the basis of digital orthophotomaps. The utilization of the possibilities of digital photogrammetry for determining the real boundaries of cultivated agricultural land in order to receive subsidies.

The concept of the geographic database for the preservation of surface and subsurface water in accordance with the regulation 2000/60 of the EU. The following problems were handled: to propose a data model of geographic database for Water Framework Directive (WFD), to propose a hierarchical coding system of hydrologic objects, and to evaluate the integrity and interoperability of the data model of geographic database for WFD.

The Institute of Geography of the Slovak Academy of Sciences

The research in the field of cartography, geoinformatics, and remote sensing in the specified period was focused at the improvement of the methods of the interpretation of satellite images with the intention to identify, analyse, and evaluate changes of the landscape in 1999-2000, as well as, to relate these changes to the natural structure of the landscape at regional, state, and European level. The research activities concentrated on the design of maps, which are used for documenting especially the landscape changes.

The map presentation of the changes of the land cover in Slovak regions in 1999-2000 (Land cover changes in administrative regions of Slovakia in 1990-2000) is published in: Himiyama et al., eds., 2005. *Land use/cover changes in selected regions in the world*, 4. Asahikawa (IGU Study Group on Land Use/Cover Change and Hokkaido University of Education), pp. 25-31.

The map presentation of the changes of the land cover at the level of Skalica district (Land cover change mapping applying CORINE land cover database – regional example) is the part of the atlas: Himiyama et al., eds., 2005. *Land use/cover changes in selected regions in the world*, 3. Asahikawa (IGU Study Group on Land Use/Cover Change and Hokkaido University of Education), pp. 3-9, as well as the monograph *Geographia Slovaca*, 19, 2004, (The landscape structure of the district of Skalica: assessment of changes, diversity and stability), 123 p. Bratislava (The Institute of Geography, SAS).

In the journal *Geodetický a kartografický obzor*, 52(94), 2006, pp. 213-220 there is published a paper called 'CORINE Land Cover Data on the Maps', in which cartographic aspects of specific maps are characterized (especially the use of the means of expression on maps), these maps being created by application of CORINE land cover data in some European countries and in the Institute of Geography of the SAS.

IV. The Publishing Activity

The Cartographic Society of the Slovak Republic publishes the year book *Kartografické listy* since 1993. It is sent to about 40 addresses from all around the world. It contains scientific articles written by cartographers from Slovakia, the Czech Republic, and other countries of the world. It contains selected articles by students of Slovak technical or science universities. The articles comprise of an abstract, key terminology, the text of the work, and a summary in English.

The publishing activity concerned with the publishing of cartographic works is focused at the following institutions: Geodetic and Cartographic Institute Bratislava and VKÚ a.s. Harmanec.

Geodetic and Cartographic Institute concentrated its attention on the processing of the Basic Database for Geographical Information System as one of the subsystems of the Automated Information System of Geodesy, Cartography and Cadastre. In addition it is a gestor of publishing of the State Map Publications – the Basic Maps of the Slovak Republic at 1:10 000 – 1:200 000 scale. It is also a publisher of other types of maps derived from basic maps.

VKÚ joint-stock company is a commercial cartographic organisation, which is the dominant publisher of maps and atlases in the Slovak Republic. It centers its attention on publishing of cartographic materials for schools, and maps and atlases for drivers and tourists. There is a rich collection of city orientation maps for almost all Slovakia.

During the observed period the following outstanding atlases were published:

- *The Tourist Atlas of Slovakia* (Turistický atlas Slovenska)
- *The Top 10 Tourist Areas of Slovakia* (Top 10 oblastí turizmu Slovenska)

In addition to the mentioned publishers, the cartographic publications are also edited by the following organisations: State Geological Institute of Dionyz Stur Bratislava, Mapa Slovakia Bratislava, Hamap Bratislava, Lesoprojekt Zvolen, Geodis Bratislava, Esprit Banská Štiavnica, Soil Science and Conservation Research Institute, and the Institute of Topography Banská Bystrica.

A special attention should be paid to *Population atlas of Slovakia* (Atlas obyvateľstva Slovenska), which was published by the Faculty of Natural Sciences. It is composed of a separate map and text section. Concerning its topic the atlas is a geographical work, but the means of presentation of the information is cartographic. It is made up of 7 chapters, and was also published on CD-R.