

ACTIVITIES OF THE STATE AND PRIVATE CARTOGRAPHY IN THE CZECH REPUBLIC

Miroslav Mikšovský

Czech Cartographic Society

Abstract. The paper shows present state and private cartographic activity in the Czech Republic. There are described currently used methods of cartographic presentations, digital databases, internet pages and sources containing cartographical information, on-line access, cartographical projects and other mapping services.

Key words: Czech cartography, digital databases, cadastral map, map presentation, maps on internet

INTRODUCTION

Digital methods of map elaboration are substantially asserted as in the state sphere as well in the private cartographic publishing houses. While in the state sphere are used for the map compilation predominantly digital databases (ZABAGED, DMU25), in the private sphere are mostly used various graphic programmes, which are suitable for the computer map design over various graphical sources (especially the Swiss programme OCAD).

Substantially expanded the map presentation on CD-ROMs and on Internet, where many map servers are in function and serve for search of villages and of addresses. Apart of maps are here for disposal the aerial photographs as well.

The Czech Office for Surveying, Mapping and Cadastre introduced the web inspection into the real estate cadastre, where many information connected with the ownership can be gained. Into operation was introduced the geoportal, which contains the mapping service (an on-line access to data), the commercial module (orders of maps and digital data) and old maps (inspection of records of the Central Archives of Land Surveying and Cadastre) – <http://geoportal.cuzk.cz>.

STATE MAP SERIES

The state map series of the Czech Republic are new defined by the government order No. 430/2006 from August 16th, 2006 about the determination of the binding geodetic reference systems and state map series of the state territory and principles of their use. State map series according to the § 3 of this document are:

- the cadastral map
- the State Map at a scale 1:5000
- the Basic Map of the Czech Republic at scales 1:10 000, 1:50 000, 1:100 000 and 1:200000
- the map of the Czech Republic at a scale 1:500 000
- the Topographic Map at scales 1:25 000, 1:50 000 and 1:100 000 and
- the Military Map of the Czech Republic at scales 1:250 000 and 1:500 000.

The binding thematic state map series for the state territory are maps created for the whole state territory on the base of the upon introduced state map series.

The cadastral maps are compiled in the coordinate system S-JTSK (Křovák projection) or in the cadastral coordinate systems Gusterberg or St.Stephan (Cassini-Soldner projection). The State Map 1:5000, the Basic Maps of the Czech Republic at scales 1:10 000, 1:50 000, 1:100 000 and 1:200 000 and the map of the Czech Republic at a scale 1:500 000 use the coordinate system S-JTSK and the altitude system Balt – after adjustment and are completed by the coordinates of the World Geodetic System 1984 (WGS84) event. of the European Terrestrial Reference System (ETRS). All these maps are issued by the civil geodetic survey, i.e. by the Czech Office for Surveying, Mapping and Cadastre.

The Topographic Maps at scales 1:25 000, 1:50 000 and 1:100 000 and the Military Maps at scales 1:250 000 and 1:500 000 use the Universal Transversal Mercator projection (UTM) or the Lambert Conical Conformal projection. These maps are issued by the Military Geographic and Hydrometeorological Office and are determined for the state defence cover.

The state map series created for public interest are used on the one hand by the topographic and thematic map administration, on the other hand by the needs of the crisis management and the integrated rescue system.

The cadastral maps are now continuously digitized; the result of these works is according to the accuracy degree a digital cadastral map (DKM) or a digitized cadastral map (KM-D) with following transformation into the coordinate system S-JTSK. For the Basic Map of the Czech Republic elaboration has been created the digital vector data base ZABAGED with attributes and the data base of geographic names GEONAMES, which are for disposal (as a paid service) for public use. The newly elaborated Basic Maps of the Czech Republic are derived from these data bases and printed on a digital printing machine DICOpres; with it is equipped the detached workplace of the Land Survey Office in Sedlčany.

From thematic maps are digitally elaborated as well the Road Maps of the Czech Republic 1:50 000 and the Overview of Triangulation and Supplementary Points and the Overview of the Levelling Net, both maps at a scale 1:50 000. Some thematic maps former created on the base of the analogue Basic Maps of the Czech Republic (i.e. the Water Supplying Maps 1:50 000, the Map of the Basic Territory Units 1:50 000 etc.) are continuously printed on the offset presses from the saved printing masters.

CARTOGRAPHIC ACTIVITIES OF PRIVATE PUBLISHING HOUSES

After the year 1989 stopped the map editing monopoly of in the Czech Republic emerging from the Geodetic Law No.46/1971 valid till this time. From the 1st of January 1991 was the state Geodetic and Cartographic Enterprise in Prague divided in the Land Survey Institute (now the Land Survey Office) Prague and the state enterprise Kartografie Praha, that got in the first wave of the coupon privatisation in the year 1992 a joint-stock company (Inc.). Simultaneously was from the former cartographic section of the Geodetic and Cartographic Enterprise Praha separated the compilation, elaboration and printing of the state map series and it was made over to the Land Survey Institute. Kartografie Praha, Inc. specialized in maps and atlases for schools, public use and export.

In connection with the end of map edition monopoly for civil needs emerged in the years 1991 till 1993 series of cartographic publishing houses, either as joint-stock (Inc.) or limited (Ltd.) companies. After the privatisation of Geodézie Liberec, state enterprise developed in the year 1992 Geodézie ČS, Inc. with a map publishing section in Prague. Accordingly was privatised in the year 1992 the state enterprise Geodézie Brno, that was as well transformed to a joint-stock company with a map publishing section. Both these joint-stock companies collaborated very closely and created series of new cartographic works, especially in the field of road maps and atlases, tourist maps and town plans. Both publishing houses contributed greatly to enforce digital methods of map elaboration and of map editing on CD-ROM (as the edition GeoBasis, initialised by Geodézie ČS). On the market of cartographic products won as well recognition the company SHOCart (emerged in the year 1991) with the seat in Zlín (now Zádveřice), at first in the field of orienteering maps and later in the field of tourist and cyclotourist maps. With an initiative won on the market recognition as well the voluntary organization Klub českých turistů (Czech Tourist Club), that edited step by step new tourist maps of the whole state territory at the scale 1:50000 in cooperation with the Military Cartographic Institute in Harmanec (Slovakia).

In the field of school atlases keeps till now the greatest position Kartografie Praha, Inc. This publishing house has a more than 50years long tradition and it had till the year 1991 the monopoly in the field of cartography on the Czech market. It publishes school geographic atlases for elementary and middle schools (School Atlas of the World, School Atlas of Europe, School Atlas of the Czech Republic), the edition of paperback atlases (the World, Europe and other continents, Czech Republic) and maps relating to national history and to geography for elementary schools. Rich is as well the edition of school history atlases (two part Atlas of the World History, two part Atlas of the Czech History) and paperback history atlases of the World and of Europe (Prehistory, Middle-age, New Age Ist and IInd, History of the 20es century, Czech history). Besides publishes Kartografie Praha, Inc. series of school wall and desk historical maps. It publishes in the field of atlases for the public except reeditions of the popular Big World Atlas and the Pocket World Atlas newly the Family World Atlas. The latest hit of this publishing house is in the last years a large serie of the Czech Republic thesauri (111 Best of the Czech Republic, 222 Technical Treasures of the Czech Republic, 333 Memorials, 444 Historical Towns, 555 National Folk Architecture Memorials, 777 Churches, Monasteries, Abbeys and Chapels, 888 Castles, Palaces and Strongholds of the Czech Republic and 1111 Memorials and Sights of Prague). The publishing house edition is rich in the field of road maps and atlases and other kinds of tourist and sport maps as well. To the

novelties of the publishing house belongs the popular TV programme Cestománie (Travelling Mania) in the book form, that introduces to the users various lands of the world by maps and accompanying texts completed by many photos. To important events in publishing belong the Atlas of Tourist Sights of Europe, Austria and Czech Republic and Slovakia as well. To the sights belong as well the title Prague – Orthophotomap Atlas 1:5000, Orthophotomap of Prague and Prague – an Aerial View of the City Center. Further particulars of the publishing house activities is possible to find on the web page <http://www.kartografie.cz>.

An important position between the cartographic publishing houses has Geodézie ČS, Inc. sitting in Prague. The publishing house has in its editorial programme the editing of Road Atlases of the Czech Republic at the scale 1:100 000 and 1:500 000 and of the Road Atlas of the Czech and Slovak Republic at the scale 1:200 000. It started in the year 2002 to edit the serie of Region Atlases of the Czech Republic 1:100 000 (till now have been edited 4 regions). In the edition „Maps for Free Time” was issued in the year 2003 the Big Atlas of Fishing Grounds 1:200 000 and a serie of Czech Republic Regions Fishing Maps at the same scale. At the scale 1:500 000 were issued maps of the Czech Republic Castles and Palaces and the Czech Republic Camps and Lookout Towers. To the most important works of the publishing house belongs the creation of software products GeoBáze Standard and GeoBáze Professional. These products include the Czech Republic map 1:400 000, 1:200 000, 1:100 000 and 1:50 000 and maps of regions 1:100 000 and 1:50 000. With help of simple operations may the user surf between various scales and ask for necessary information. The system enables map printing, observing of the users own position and the position of other subjects using the satellite GPS signal. A novelty is the possibility of vector drawing over the maps and connecting of data base to these vector elements. Products are distributed on CD. From the half of the year 2006 got the publishing house Geodézie ČS, Inc. a subsidiary company of Kartografie Praha, Inc. Detail information are on the web page <http://www.geodezie.cz>.

Of other important cartography publishing houses we shall name SHOCart, Ltd., Zádveřice. This cartographic publishing house originally elaborated orienteering maps. Now they publish tourist and cyclotourist guidebooks, water sport guidebooks, fishing maps and winter tourist and ski maps. To interesting titles belongs the Czech Republic Cycloatlas, that shows the whole territory at the scale 1:100 000 with the up-to-date state of marked cyclo routes and cyclo paths. Extensive is the creation and publishing of road maps and road atlases, city plans, city atlases and guidebooks. As for the school maps production offers the publishing house only a complex of 6 overview maps (the World, Europe, Czech Republic 1:1 250 000). Detail information of the publishing house can be found on the web page <http://www.shocart.cz>.

A cartographic publishing house specialized in the Czech Republic region maps and city maps and atlases is the advertising agency P.F.Art, Ltd. sitting in Brno. The publishing house uses a topographic base, in which it prints advertising of various firms. Its own editorial initiatives are the atlas Czech Republic – Dangerous Traffic Stages, that warns of places of often road accidents and the Atlas of the Czech Republic Towns with plans of 80 biggest towns. A novelty of the publishing house is the atlas We Introduce Czech Republic Towns Ist and IInd part with 141 detailed town plans. Other information is possible to find on <http://www.pfart.com>.

Besides of the above mentioned cartographic publishing houses emerged in the Czech Republic in the 90th years some smaller publishing houses oriented on map production for regional purposes. Their list is available on the web page of the Czech Cartographic Society <http://www.czechmaps.cz>.

MAPS ON INTERNET

In the Czech Internet environment is the on-line map access relatively large. We can find maps on all big portals, but their quality and the work with them is rather different.

On the Internet portal *Seznam.cz* will be offered at the bookmark „maps” a selection whether you can search a town, a street or another object; it is possible from it to walk off to the page with the route scheduler or on the home page www.mapy.cz. The server „*mapy.cz*” contains the whole Czech Republic and further about 70 towns (incl. Prague). When we have assigned the chosen city the searched map will be displayed. On the page are some other information as well (number of town inhabitants, geographic coordinates). It is possible to change the map scale and its output for the print. On the route scheduler we specify the initial and the aim village (event. incl. the street name); the scheduler will find the quickest or the shortest passable route, that will be displayed on the map and in a text form as an itinerary as well.

The Internet portal *Centrum.cz* finds towns, seats, villages, and streets in the whole Czech Republic incl. 125 town plans. It is possible to find as well several objects (filling stations, train stations, cultural, catering and health centres). It is possible to change the scale and the map section viewport. The server is equipped by the road scheduler as well.

The most visited portal *Atlas.cz* offers on the server www.mapy.atlas.cz not only usual maps, which can be found on other servers, but a orthophoto of Prague and a tourist map of the whole Czech Republic at the scale 1:50 000 as well. On the server are maps of 125 Czech towns and 2 maps of Prague. The browser of towns and villages data bases displays after the name input not only the chosen object, but as well its postal code. The server contains the route scheduler; it is possible to select, if we would like to reach the destination by car or by public means of transport.

On the Czech Telecom portal „*Quick.cz*” we can find apart from the map of the whole Czech Republic more than 100 plans of Czech and Moravian cities. The server contains as well a route scheduler; it is possible to select the quickest, the shortest or the cheapest mode of transport.

The portal *Tiscali.cz* offers on the server www.mapy.tiscali.cz a road map of the Czech Republic, 15 city plans (incl. Prague), tourist and cyclotourist information, the route scheduler and a World map with state boundaries, capitals and other big cities.

On the portal *Volny.cz* it is possible using a formular to find the searched place, which will be displayed on the map, at the address „web.volny.cz/najdito/mapy.php”. The route scheduler is on the server lacking.

On the server „www.mapyonline.cz”, which is managed by SHOCart, Ltd., is possible to find apart from towns as well castles and palaces, campings and protected natural areas. The server contains a map of Europe and plans of Czech and Moravian cities and villages as well.

The server <http://supermappy.centrum.cz> contains the map of the Czech Republic with an optional scale enlarging till 1:50 000. It makes possible to seek after villages and it is equipped by a route scheduler.

The most detailed information we can find on map service pages of the Portal of the Czech Republic Public Administration <http://arwen.ceu.cz>. The portal uses state map series, registers guaranteed and managed by the state administration, thematic sets and data bases. Apart from the village selection it contains a row of thematic layers, in particular of geology and environment. A part of the portal builds the Digital Atlas of the Czech Republic produced by the Military Geographic and Hydrometeorological Service of the Czech Army, which enables to select and to display the villages until the scale 1:5000.

PROJECT „LANDSCAPE ATLAS OF THE CZECH REPUBLIC”

The Ministry of Environment of the Czech Republic advertised in 2003 a grant on the compilation of the Landscape Atlas of the Czech Republic. The works on this atlas are going on and will be finished in 2007.

The atlas is divided into 9 thematic parts:

- Landscape – Object and Methods of Study,
- Geographic Position of the Czech Republic
- Historical Landscape
- Natural Landscape
- Standing Landscape
- Landscape as a Heritage - Preserved Landscape – Natural and Cultural Heritage
- Landscape – Area for the Society
- Landscape of the Future
- Landscape Reflex in the Art – Landscape as an Art

The atlas will be issued in 2007 in a book form and in an electronic version on CD. Internet version of the atlas will be for disposal in the same year for certificated as well for other users.

The most visited portal *Atlas.cz* offers on the server www.mapy.atlas.cz not only usual maps.

PAŃSTWOWA I PRYWATNA DZIAŁALNOŚĆ KARTOGRAFICZNA W REPUBLICIE CZESKIEJ

Streszczenie. Artykuł zawiera informacje na temat współczesnej działalności kartograficznej w sektorze państwowym i prywatnym na terenie Republiki Czeskiej. Przedmiotem opisu są obecnie stosowane i wykorzystywane metody przedstawień kartograficznych, używane bazy danych, strony internetowe udostępniające informacje kartograficzne, także w dostępie on-line, realizowane projekty kartograficzne i inne usługi związane z udostępnianiem oraz korzystaniem z map, a także informacji zawartych w różnych bazach danych.

Słowa kluczowe: kartografia czeska, numeryczne bazy danych, mapy katastralne, przedstawienia kartograficzne, mapy w Internecie.

Accepted for print – Zaakceptowano do druku: 30.09.2007