



Digitizing of Old Maps and their Web Publication in digitizing centre of VUGTK

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In this paper we would like to present our methods, apparatuses and technologies that we use for web publication of old cartographic products.

In year 2007 a new digitizing centre in Research Institute of Geodesy, Cartography and Topography was founded. In this centre we focus mainly on old and valuable maps, plans and map atlases and we deal with the whole process of making old maps available on the internet – digitizing, adjusting digital images, georeferencing and pre-processing images for online publishing. In the field of old maps we cooperate with Institute of History of Academy of Sciences of the Czech Republic and with one of the biggest map collections in Land Survey Office in Prague.

We use a large format table scanner with 400 dpi optical resolution, which is the most suitable for old maps digitizing. The scanner format is A0+ (1300 x 914 mm) and thanks to its construction maps can be digitized without any damage. Large map atlases can be digitized safely and with good quality thanks to the scanner's cradle. The Scanner is regularly tested and has certification for digitizing cartographic products.

Before publishing, the acquired raw scans need to be cropped and watermarked. For publishing the processed scans we use two methods – Zoomify and WMS (Web Map Service). Zoomify is a commercial tool that is used both for image processing (to prepare large format images for online publication) and for displaying images in web pages while allowing to zoom and pan the images.. We use this tool for publishing individual maps or individual map sheets with map frame information in the case of a map sets.

As a second method we decided on Web Map Service which is in our opinion the best method for publishing the maps on internet, especially for map sets. We use the UMN MapServer to make the maps available. We also provide a JavaScript based web application to display the maps in web browser. This application allows image data from several WMS sources to be displayed at the same time. Individual data sources' transparency can be adjusted to produce overlay views and provide visual comparison between various maps. In our digitizing centre we processed following map sets – Müller's map of Bohemia (1720) and Moravia (1716), special maps of the 3rd Military Survey and a sample of the first release of national map series called Derived State Map 1 : 5 000 (SMO5). Orthophotomaps, cadastral maps and old military maps from different servers are connected to our client as additional map layers and together with our own map layers make our web application well suited for analyzing objects in old maps and for comparing old maps with the present state. Results of our work with old maps of the Czech Republic can be seen on our Map portal <http://mapy.vugtk.cz>.