

VALUABLE MAPS BASED ON OPEN SOURCE DATA

*DRACHAL J., BRZEZINSKA-KLUSEK M., WROCHNA A.
Institute of Geodesy and Cartography, WARSAW, POLAND*

We nowadays meet with an abundance of valuable cartographic data acquired from satellites such as images of the Earth's surface or elevation surveys. They are not made publicly known in a refined manner they deserve being exploited mainly for extracting specific information. Fortunately, sometimes they are disclosed. A good example is the global image of the Earth's surface named NaturalVue, used by an internet site: maps.google.com. To present new kinds of data it is sometimes necessary to develop a new kind of map as new data do not always fit to existing categories.

In the year 2000 the Shuttle Radar Topography Mission (SRTM) was carried out which led to the acquisition of a global high resolution terrain model which was an unprecedented event. The model was made publicly available through the internet. It is good enough to draw contour lines for a 1:200 000 scale map but the same data used in shaded relief technique give very impressive image of the terrain topography. It is particularly interesting to people bred on physical maps with hypsometric tinting because it gives them a possibility to see the world anew. On shaded relief maps the mountain ranges are more distinct and their morphology is better visible.

The shaded relief image based on SRTM model looks interesting not only because one could not see such image before. It has advantages of uniformity, minuteness and unlimited extent. It is instructive and very suitable for studies of terrain topography over considerable areas like e.g. parts of a continent. But the shaded relief image alone is a gray scale picture which looks artificially and it is legible only to specialists.

An appropriate cartographic frame for these valuable height data has been developed. It has a form of a small scale map with the scale adjusted to the ground resolution of the elevation model being 100 m.

The map covers the area of Central Europe and is based only on open source data. Besides the SRTM terrain model a satellite image was used to picture the terrain in colours. A Moderate Resolution Imaging Spectroradiometer (MODIS) true color image has been chosen for this purpose. A combination of shaded relief with the true color image of the terrain shows the ground in a realistic manner which is the result of careful analysis.

Several issues had to be solved before the map was completed. The design had to be subordinated to shaded relief image. When there are colors and shades the transmission of other graphic information marked with lines, points and letterings is limited and a question appears of jamming the map with graphic signs. It was solved by a balance between background and foreground after making proper selection of information.