The accuracy analysis of the map *Sclavonia, Croatia, Bosnia cum Dalmatiae parte* made by G. Mercator

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Abstract:
The 500th anniversary of Gerard Mercator's birth was celebrated on March 5, 2012. Mercator was a cartographer whose work provided a priceless contribution to cartography. He published many maps of different areas, one of which is the map *Sclavonia, Croatia, Bosnia cum Dalmatiae parte*. Since he did not make maps by using mostly geodetic surveys, and surveying methods and their accuracy have since greatly improved, question arises about the accuracy of the mentioned map.

MapAnalyst software was used to analyze Mercator's map. The program was developed by the Institute for Cartography of the Federal Institute of Technology (*Eidgenössische Technische Hochschule – ETH*) from Zurich. It is completely free of charge and available on the website *http://mapanalyst.cartography.ch/*. The purpose of the program is visualization and study of accuracy of old maps. The analysis starts with searching for the same places on the Mercator's map and the reference map. In order to compare results, an analysis was performed with two reference maps. The first one was OpenStreetMap, which is supported within MapAnalyst. The second one was a general geographic map at the scale 1:1 000 000 in a modified polyconic projection with the ellipsoid adapted for the international map of the world. This geographic map was published by the Military-Geographic Institute in Belgrade in 1962 and updated in 1972. After choosing the type of transformation in MapAnalyst, visual representation of distortions, such as distortion grids, displacement vectors, rotation and scale isolines were obtained. Numerical values of distortions were provided in the form of a report.

In addition to MapAnalyst, programs like GIMP and Inkscape were used to visualize distortions.

Keywords: Gerard Mercator, map, MapAnalyst, cartometric analysis, isolines