



## **The Danube Mappation of Hungary (1823-45) and its georeferencing method**

János Mészáros

Dept. of Cartography and Geoinformatics, Eötvös University of Budapest, Budapest, Hungary (messer@map.elte.hu)

The sheets of the Danube Mappation were surveyed between 1823 and 1845, leading by the Management of Water and Construction. The leader-engineers were Mátyás Huszár, Pál Vásárhelyi and finally Ottó Ferenc Hieronymi. It shows the Danube and its riverside very accurately from Dévény (now Devín in Slovakia) to Pétervárad (now Petrovaradin in Serbia). The map represents the river itself, as well as the streets of towns and villages, steeples, small streams and canals, forests and the specialized signs of water measurement.

The map was drawn on sheets with a size of  $28 \times 22$  Viennese inches. Its scale is 1 Viennese inch to 50 Viennese fathoms that is 1:3600 in metric system. Therefore the dimension of one sheet is  $1400 \times 1100$  Viennese fathoms on terrain. In metric system it is  $2655,077376 \times 2086,132224$  m. The coordinates was described in Cassini projection. The central point of the coordinate system was the old observatory of the Gellérthegy in Buda (now Budapest in Hungary). The ellipsoid which had been used for the triangulation was the Zach-Oriani combined ellipsoid.

The georeferencing of map sheets is based on the sheet labelling system. It shows the location of the individual sheets from the central point, so the coordinates of the corners for all map sheets had been calculated. The error of georeferenced mosaic is between 5-10 meters.