



A cartographical perspective to the engineering work at the Sulina mouth

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In the period 1856-1938 the European Commission of the Danube (ECD) has produced numerous maps of Danube Delta, published in different reports or individual atlases. Before the Crimean War (1856) navigation through the Sulina mouth was difficult, as a result of natural obstacles which hindered the trade of Danubian states. The principal objective of the ECD was to facilitate a free commerce and to maintain an optimum depth for ships at the Danube mouth. New engineering works were conducted by Sir Charles Hartley, an English engineer with experience in hydrological and coastal projects. After the Second World War the Romanian authorities led engineering works and cartographical materials at the Sulina mouth.

In the last 150 years many detailed maps were developed by different authorities using different cartographical parameters. The main concern is about the cartographical projections which are not specified in the most cases. The European Commission used at Sulina a local grid, with a datum focused on the old lighthouse, and a rectangular network divided in 500 feet units. Maps from Romanian authorities are in Gauss-Kruger projection, or use Stereo-70 like national grid.

Our purpose is to create a cartographical background necessary for a further coastal evolution model at the Sulina mouth. At this moment there are too many maps with uncertain information about them. So, the first step is to index, catalog, define metadata and distribute all the maps using a web services. In our opinion the most reliable solution is represented by GeoNetwork software. For our study area we have been integrating 70 cartographical maps, which cover the last 150 years and are delivered via <http://www.geo-spatial.org>

The next stage consists in 1) georeferencing maps and reproject them into an UTM/WGS84 projection, 2) digitizing the bathymetrical contours / sounding points and elaborate separate Digital Elevation Models for every map and 3) creating a general evolution model of the Sulina mouth.