

Digitisation of Large Volumes of Historical Maps

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In the early 1990's a number of interested bodies investigated an idea to establish a modern map museum in connection with the head office of the National Land Survey of Sweden, NLS. The archives of NLS contain about 300 000 historical hand-made maps in addition to more than 100 000 printed maps. In connection with this investigation the idea was born to digitise by scanning large parts of this map material. The main reason for this would be to make the map material more easily available to scientists, planners, the general public etc. Furthermore old maps would then be saved from further wear and tear and some other advantages by transferring them into digital form could be identified as well.

In order to develop techniques and to investigate the costs for digitisation of large volumes of historical maps a pilot test was initiated in late 1992. The paper reviews the work carried out in this test, which was carried on for an 18 month period. The pilot test included acquisition of software and hardware needed for digitising and postprocessing of scanned data.

The choice of digitising equipment must be influenced by the fact the ancient maps are fragile, colourful, unique and irreplaceable. Part of the maps are very large and some of them are bound in thick volumes. A flatbed scanner and a high resolution digital camera has been used for data capture.

Digital image processing was used to transform scanned data in different ways. Much work has been devoted to the problem of finding a suitable solution for compressing the large amount of data resulting from the digitising.

The paper also presents experiments with handling of digital map images on PC with standard image processing software. Thus images can be sharpened, retouched, mosaiced, magnified etc. After such image processing high quality output can be made on a laser printer in black-and-white or colour.

The pilot test has now been finished. This means that techniques and know-how have been developed for digitisation of different types of historical maps. During the test period some 8 600 old maps were digitised. Now, the digitisation of map material of NLS archives continues at a pace of some 12 000 maps per year.