Belgium HGIS Resources Online

• Belgium HGIS online: http://www.flwi.ugent.be/hisgis/

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Towards a Historical Geographic Information System for the Netherlands (HGIN)

As this issue goes to press, the History Department of the Netherlands Institute for Scientific Information Services (NIWI) in Amsterdam is in the process of digitizing all Dutch historical censuses (1795-1971). Within a few years, they will be accessible for statistical research. In order to add a geographical component to these census statistics, the NIWI recently has started a complementary project called Historical Geographic Information System for the Netherlands (HGIN).

The HGIN project is not the first of its kind in the Netherlands. Two pioneer projects, "Kartofoot" and "NLKAART," will be integrated into the HGIN project. The Kartofoot project, which started in the 1960s, was the first historical mapping system for the Netherlands. From a map of the 1856 municipal division of the Netherlands, E.W. Hofstee constructed the "Kartofoot," a giant jigsaw puzzle of over 1,000 pieces, in which every piece represented a different municipality. With ten differently shaded copies for every municipality, he was able to construct choropleth maps for all kinds of variables. As soon as an assistant finished the puzzle according to Hofstee's instructions, a photograph was made which was ready for publication (see Figure 1).

The main problem with Hofstee's map was that it only represented the municipal division of the Netherlands in 1856. However, every year, municipalities merged or boundaries changed. As a consequence, the total number of municipalities in the Netherlands fell from more than 1,200 in 1830 to about 600 in 1990. In order to draw a correct municipal map of the Netherlands for every moment in time between 1830 and 1990, 280 different maps are needed instead of the one Hofstee created. Hofstee more or less solved the problem by recalculating or interpolating the original statistics. In so doing, he managed to use his 1856 map for data from the start of the nineteenth until the beginning of the twentieth century.

The second pioneer project, NLKAART, was initiated by Onno Boonstra. This project, which started in the mid 1980s, aimed to solve Hofstee's problem using computer technology. Boonstra's system consisted of just two tables in a relational database. The first table identified the municipality and the time period in which each municipality existed in a specific form, the second table contained the coordinates of that specific
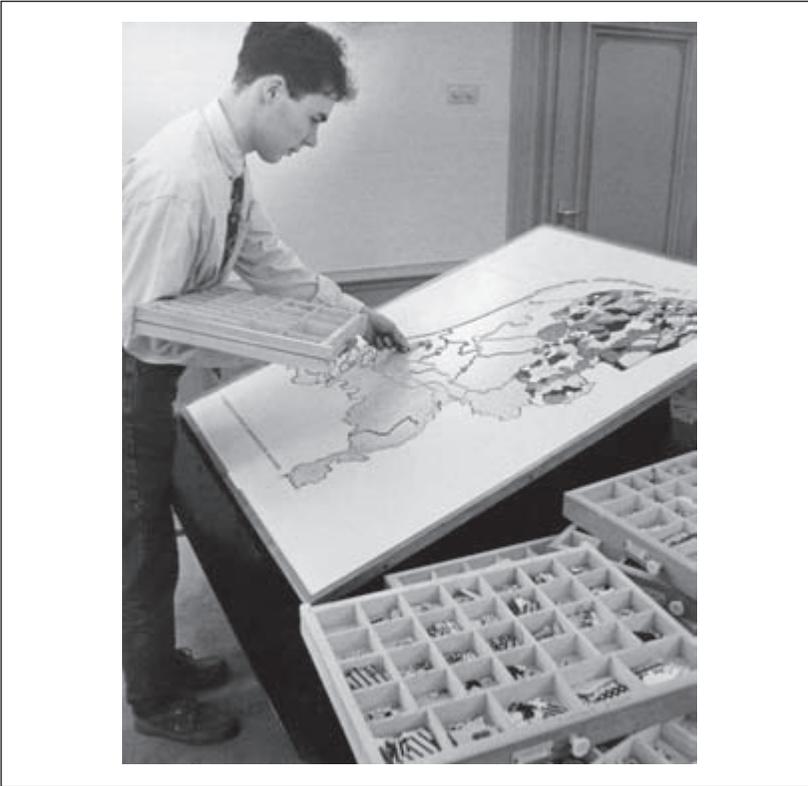
Figure 1. Putting the Kartofoot together: Hofstee's assistant at work, mid 1960s. Photo by W.F.J. de Jonge.

form. Because the NLKAART system ran in SAS using SAS/Graph to create the maps, a few lines of programming sufficed to retrieve munici-palities with the correct boundaries for a given date, combine them with relevant statistical data, and put them into a historically accurate map. Initially, NLKAART covered 150 years, 1830-1980. In the late 1990s, the system was extended to the earliest period for which data on munici-pal boundaries is available in the Netherlands, 1811-1990. There also was a partial conversion from SAS to MapInfo.

The current HGIN-project aims at four general results:

1. *Conversion of NLKAART.* HGIN aims to convert the full NLKAART system into municipal map layers for a genuine historical GIS.
2. *Adding data.* Because NLKAART's database only consists of the bare historical maps, one has to enter his or her own data into them to create a thematic map. HGIN will incorporate data from different sources, beginning with digitized census data. A gazetteer that links place-names with relevant historical information and aggregated units will be created.

3. *Adding depth*. HGIN will take NLKAART two steps further in geographical depth by digitizing *wijken* (neighborhoods) and *buurten* (blocks). Census data are available for this level of geographical detail for the years 1849 to 1971. For the most recent census years (1960 and 1971), the available sources are very good and very detailed. The existing sources for the census years between 1930 and 1956 are less well preserved, but they should still facilitate the creation of map layers for the entire country. The sources for the years before 1930 are very scattered. A pilot project will research the possibility of finding and digitizing the necessary information for about thirty municipalities back to 1849. The results of this pilot will be evaluated to see if it is possible (technically and financially) to recreate the sub-municipal boundaries of all Dutch municipalities for the census years between 1849 and 1930.

4. *Distribution through WWW*. The HGIN project aims to distribute maps and (census) data over the Internet. Different GIS servers will be tested before a choice is made.

The first results of HGIN will be available in 2006.

HGIN Resources Online

• HGIN home: http://www.niwi.knaw.nl/nl/geschiedenis/projecten/ toon (in Dutch)

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HGIS Germany: An Information System on German States and Territories from 1820 to 1914

This project grew out of an interest in the construction of digital historical maps of the development of German and European states. Such maps, arranged in thematic strands and combined in series covering important benchmark years, have been placed on a mapserver that is already in operation at the Institute of European History (IEG) at Mainz, an independent research institute loosely connected with Mainz University. However, map series can only show a limited amount of information for selected dates at fixed scales, and it is generally not possible to attach a large variety of thematic data such as statistical or general historical information to them. A GIS solution, using an ArcGIS platform, was therefore designed in order to cover this gap, which, in a sense, then led to a new