

GEOGRAPHICAL NAMES – FROM CARDS TO ONLINE DATABASES: FACING TODAY’S DIGITAL CHALLENGES

Overview

Since the early days of United Nations activities on the standardization of geographical names in the 1960s, the world has experienced enormous advances in technology and in communication media. With these advances, the methods of recording, storing and disseminating toponymic data have changed considerably from handwritten paper records to sophisticated interactive online digital databases. Reliable and authoritative information is still required, but today the demand is for names data to be available in a timely fashion, to be flexible in selection and format to suit user needs, and to be easily combined with other geospatial data. Meeting these requirements, while recalling and respecting the cultural heritage provided by our toponyms, provides ongoing challenges.

The results of technological change

- For centuries, lists of geographical names have been compiled for reference purposes, as for example, indicating results of exploration or of census activities, or as indexes to atlases. These lists using a logical order of toponyms are referred to as **gazetteers** and were traditionally in paper format.
- For much of the twentieth century, offices of national geographical names boards stored their names information in card files and in document folders, and from time to time, published gazetteers of the officially recognized names. Since the 1980s, **national toponymic databases** have increasingly become digital, with a variety of names listings produced from the data files. From the 1990s, UNGEGN has been promoting the establishment of national geographical names websites with querying and download capabilities, to encourage the use of official names in cartographic and GIS products, and as elements of national spatial data infrastructures. In 1998, UNGEGN concluded that use of the Unicode standard (ISO/IEC 10646) best addressed issues of data compatibility and character display which hindered exchange of toponymic data.
- Although many countries have complex interactive relational names databases, and others have names as attributes in topographic databases or as a layer in Geographic Information System (GIS) products, many developing countries do not have their geographical names data available in such ways. One group addressing this for Africa is the United Nations Economic Commission for Africa (UNECA). **UNECA** is developing free **database/gazetteer software (GeoNyms)** that provides compatibility of databases between African countries and yet can also be customized to address the data needs of individual countries.
- Most toponymic databases today use **single-point sets of coordinates** for locating a named feature. Future GIS applications might require delineation of the extents of features to enable more accurate application of names.

Ongoing challenges and initiatives

- Geographical names data is usually collected and made available at the national or sub-national level. However, today there is considerable need for data covering **multi-national areas**, regardless of political boundaries, for instance, to facilitate humanitarian aid following natural disasters. In response, a number of different initiatives are in hand or planned through UNGEGN directly or through its associates:
 - The Asia South-East Division and the Pacific South-West Division have compiled a database and gazetteer of the region, using the officially recognized endonyms from the countries of the region.

- Some countries of the Africa West Division are considering the possibility of combining their names data for a CD-ROM.
- Countries of the Arabic Division are planning a combined gazetteer of their names data.
- The UNGEGN Secretariat is hosting UNGEGN's multilingual, multi-scriptural world geographical names database on the web. In map or tabular format, users are able to find country names in the six United Nations languages as well as in the language(s) of the countries themselves. Names of capitals and cities with a population over 100,000 are also included in this online database.
(See <http://unstats.un.org/unsd/geoinfo/geonames/>)
- In Europe, the EuroGeoNames project has been initiated to network national toponymic databases of the continent using web services technology. The responsibility for maintaining the data will continue to rest with the individual countries, while users will be able to access multi-national data with common standards, through a central server. Names of features crossing international boundaries are coordinated, and a variety of exonyms, unambiguously linked to the officially recognized endonyms, are also available to database users. (For details see <http://www.eurogeographics.org/eurogeonames.>) The Directive for the Infrastructure for Spatial Information in the European Community (INSPIRE) includes the adoption of common Implementing Rules (IRs) for geographical names. (For details see <http://inspire.jrc.ec.europa.eu/>)
- UNGEGN's **Working Group on Toponymic Data Files and Gazetteers** recently contributed to the UNGEGN publication *Technical reference manual for the standardization of geographical names*. Apart from being the liaison for UNGEGN with international bodies involved with technical database standards, the Working Group now faces challenges at two different levels: (a) the exchange of forward-thinking ideas and best practices among countries that have highly developed national spatial data infrastructures, and (b) addressing the needs of developing countries with little or no database capabilities.
(See <http://unstats.un.org/unsd/geoinfo/ungegn/wg2.html>)
- The United Nations requires up-to-date toponymic data to provide coordinated information for relief efforts. So UNGEGN has been actively encouraging countries to establish national names authorities and national toponymic databases, and has been supporting the work of UN-Second Administrative Level Boundaries (**SALB**) and the UN-Geographic Information Working Group (**UNGIWG**).
- A worldwide challenge for society today is the realization, through internet services, of optimum use of geospatial capabilities. Spatial data infrastructures have mainly been aimed at managing spatial data, rather than the broader need of managing data spatially. It is said that 80% of information influencing our daily lives has spatial dimensions. Cloud computing can provide easy access, security and interactivity, but what about the sources of the data? It is preferable that data be collected once - at the local level - and this has given rise to **crowd-sourcing and wiki approaches** to data gathering. For UNGEGN, promoting standards and national recognition of a country's toponymy, this more free-wheeling approach is liable to produce data that is not authoritative and possibly biased or ambiguous. To address this issue, national authorities need to increase public awareness of the benefits of standardization and address issues of accepting or rejecting these 'new' toponyms.
- The Statistics Division of the United Nations has recently started an initiative on **Global Geospatial Information Management** (GGIM), to provide a forum for UN member states to discuss the broad spectrum of critical issues involved with effective use of spatial information to address problems of major global significance. For any spatial data infrastructure, geographical names are key entry points, and UNGEGN will be an active participant in the GGIM initiative. (See <http://ggim.un.org>)