MEETING OF THE WORKING GROUP ON TOPONYMIC DATA FILES AND GAZETTEERS

Geographic Information Provision System with Geographic Names Database as a Search Key*

* Prepared Masanori Koide, Geographical Survey Institute, Ministry of Land, Infrastructure and Transport of Japan

Geographic Information Provision System

with Geographic Names Database as a Search Key

Masanori KOIDE

Geographical Survey Institute

Ministry of Land, Infrastructure and Transport of Japan

1. Foreword

The Geographical Survey Institute (GSI) of Japan has vectorized all items expressed on the 1:25,000 topographic map data covered the whole national land area, and was completed in 2002, in order to allow ready access on the computer using the Geographical Information System (GIS). In the course of the vectorization efforts, in 2000, the data of as many as 480,000 geographic names were developed and stored, complete with the place names (in Chinese characters, and Japanese hiragana), and the coordinates of representative points. All the data have been managed and controlled by the new topographic map information system that integrates and manages the topographic map data in vector form.

Also, in parallel to the development of the latest geographic information, being well aware of the growing diversity in the form of data provision, GSI has started the data provision services through the internet, and GSI has provided various kinds of geographic information on its web site. This paper introduces the two geographic information provision systems based on the geographic names database mentioned above: "the Topographic Map Browsing System" and "the Digital Japan Web System".

2. Topographic Map Browsing System of 1:25,000 (http://watchizu.gsi.go.jp/)

This system, released on the Internet since July 2000, allows a browsing of the topographic map images that have been processed and generated by raster conversion of the data of topographic maps of 1:25,000 of the whole country published by GSI. The area (approximately 6.0 km in east-west direction × approximately 4.5 km in north-south) shown in one display is one quarter of one topographic map sheet (A-2 size) at a resolution of about 200 dpi. The images were in black and white at the time this system started, but GSI provides the images in color in 2004. Searches can be done by one of three keys: index map, coordinates, or geographic names. A search by geographic names operates through the coordinates of the representative points attached to the geographic names database.

A search starts from the entry of geographic names, and then an appropriate item is selected from the options: "geographic names and public facilities", "geographic names only", "public facilities only", or "geographic names in Japanese hiragana only". After entering the name of a public facility or the geographic name of a place (in Chinese characters, hiragana, or Roman letters and numbers), by clicking the search button, a list of geographic names or public facilities is retrieved that contains the

letters and characters entered. By clicking again the button of your choice, an area map including the place name just entered is displayed, which can be scrolled up and down.

3. Digital Japan Web System (http://cyberjapan.jp/)

The system has been made available on the internet since July 2003. The ambitious concept of Digital Japan aims at construction of a virtual cyber Japan based on the huge data fed by geographic and other relevant digital information provided by diverse organizations. Ultimately it is meant to serve the purpose of simulation and as a tool for a real-time understanding of what is happening in the country.

The Digital Japan Web System enables within its framework a web site construction, where several layers of geographic information from municipalities and other organizations can be overlaid upon the background map. The development and release of the system is expected to further promote dissemination of geographic information.

The data provided by the system are seamless. A search for a certain area takes off from the index map of Japan and after several zoomings-in it finally produces the particular topographic map image of 1:25,000 needed. Another way is through the geographic names database where the geographic names and public facilities are all registered with their attributes. This latter search is operated in the same manner as the Topographic Map Browser System of 1:25,000.

Users can access the web sites with geographic information based on the Digital Japan Web System from other sites where the names of those sites are posted.

All the data in the geographic information of the Digital Japan Web System are presented in vector conforming to the World Geodetic System. The topographic map data of 1:25,000 of GSI can be used visually as a map and also the geographic names represented can be used as search keys. Further, the Digital Japan Web System, with such built-in attribute data of addresses and names of public facilities, facilitates a page development to be used as simple Web GIS.

The System is developed with a plug-in for browser connection. This makes an automatic plug-in installation by accessing the site made for the Digital Japan Web System. Once installed connections can be made to other sites of the System as well.

The Digital Japan Web System displays combined geographical information of several different layers. The particular geographic information to be sent out is placed on the web server in XML format based on the Digital Japan Profile with reference to the JSGI 2.0 (Japanese Standards for Geographic Information 2nd Edition), after which a web page can be made to read it. The background map data can be displayed together with geographic information by the Digital Japan Web System plug-in on the users' browser, which automatically establishes connection to the GSI map data server. This significantly saves time and effort of preparation and management of the background maps, allowing the resources available to be directed to the management of geographic information itself.