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### **Tenth United Nations Conference on the Standardization of Geographical Names**

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**Toponymic data files and gazetteers:**

**Data services, applications and products**

**(for example, gazetteers and web services);**

Automated data-processing systems of geographical names in Japan

Submitted by Japan\*\*

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\*\* Prepared by the Government of Japan

## **Automated data-processing systems of geographical names in Japan**

In Japan, there are various databases of geographical names which are provided either free of charge or for a fee. These databases include not only a list of geographical names, but also such information as pronunciation, code numbers, locations, etc., that can easily be accessed. The following is an introduction to some of these databases.

### **A. Geographical name database for administrative units and residential districts**

1. The administrative code numbers that correspond to each municipality in Japan are established by Japan Industrial Standards (JIS)<sup>\*1</sup>. Names and other information are compiled into databases by public and private organizations for wide use.

2. The geographical name databases for residential districts are created by the relevant organizations of the Ministry of Internal Affairs and Communications. These databases contain spellings, pronunciations, code numbers, etc. of geographical names (about 480,000 as of October 2011) that are compiled and managed as “town divisions (cho)” and “village blocks (aza)” files nationwide.

These data are available for a fee.

### **B. Geographical name database with geographical coordinates**

1. In 2000, the Ministry of Land, Infrastructure, Transport and Tourism began development of “Residential Block Level Location Reference Information,” which assigns coordinate data (latitude, longitude and plane rectangular coordinates of representative points) to an address of residential block unit (town divisions (cho)/neighborhood divisions (chome) or village divisions (oaza), and residential block number or lot number) in the urban planning areas designated by the City Planning Law of Japan (approximately 101,000 km<sup>2</sup> as of March 2010). It was completed in March 2002 and the data has been updated every year since 2003.

These data are released without charge to the public through the Internet.

2. In accordance with the Basic Act on the Advancement of Utilizing Geospatial Information<sup>\*2</sup> established in 2007, the Geospatial Information Authority of Japan (GSI) develops Fundamental Geospatial Data (FGD)<sup>\*3</sup> (1:2,500 scale level maps for urban planning districts, 1:25,000 scale level maps for all other areas nationwide). Furthermore, three types of data based on the FGD, i.e., map information derived from 1:25,000 scale topographic maps (paper), ortho images, and geographical name information are being used to compile the Digital Japan Basic Map.

Regarding geographical names, the cartographic system created by the GSI in 2002 contains the roughly 470,000 geographical name data (spellings, pronunciation, coordinate values of representative points) that were used in the 1:25,000 scale topographic maps that cover the entire nation. These geographical name data are also incorporated into the Denshi Kokudo (Digital Japan) Web System on the Internet, where they can be browsed along with maps and can even be displayed on the maps through geographical name searches.

The Digital Japan Basic Map (geographical name information) project that was begun in 2010 targets not only geographical name data from topographic maps, but also geographical names that are not listed on the 1:25,000 scale topographic maps. Because this eliminates the restrictions imposed by paper maps, it has become possible to include all place names in dense areas. Geographical names for village divisions (oaza) are also formed in polygon data.

Furthermore, each of these place names is being assigned a unique ID code (geographic identifier).

3. Since 2009, the GSI has been converting residential addresses in the roughly 8,000 square kilometers of area (as of March 2012) designated by the “Act on Indication of Residential Address” into a database. This database is composed of base numbers<sup>\*4</sup> that are the minimum units of residential indices (numbers that are assigned at regular intervals along the edges of blocks). Each data is comprised of a record of base number units, with each record containing the municipal code, names for “cho”, “aza” and “gaiku (block)”, the base number, latitude and longitude, etc, in an arranged order. As of March 2012, roughly 7,000 square kilometers had been incorporated into this database.

In 2011, these data were made available to the public free of charge through the Internet.

The Digital Japan Portal Web Site<sup>\*5</sup> provided by the GSI has been given functions that enable various types of geospatial information to be accessed from geographical names.

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<sup>\*1</sup> JIS (Japan Industrial Standards)

JIS is a national system of standards designed to promote industrial standardization in Japan that is based on the Industrial Standardization Act of 1949. It is overseen by the Japanese Industrial Standards Committee (JISC).

<sup>\*2</sup> Basic Act on the Advancement of Utilizing Geospatial Information

<http://www.gsi.go.jp/kokusaikoryu/kokusaikoryu-e30004.html>

<sup>\*3</sup> FGD includes 13 data items that are required for reference for position of roads, rivers, “machi-aza” (communities) and “gaiku” (blocks), etc. The boundaries between “machi-aza” and “gaiku” are data that divide municipalities into even smaller administrative districts. The names used to express these districts are determined by the “Local Autonomy Act” and “Act on Indication of Residential Address.” FGD is based on standards set by ISO191XX series standards (geographical information/geomatics) for geospatial information.

<sup>\*4</sup> Addresses in built-up areas in Japan are based on the “Act on Indication of Residential Address” which establishes the expression with a block-based system or road-based system. However, nearly all municipalities use the block-based system. The block-based system includes block symbols and address numbers.

Address numbers are base numbers in locations adjacent to the main entrance of a house or building and are the smallest unit of the residential address. Base numbers are assigned at regular intervals along blocks.

Address or base numbers are managed by municipalities with “resident indication ledgers” (usual scale, 1:500), and in most cases they are paper ledgers.

<sup>\*5</sup> Digital Japan Portal Web Site

[http://www.gsi.go.jp/ENGLISH/page\\_e30233.html](http://www.gsi.go.jp/ENGLISH/page_e30233.html)