

**ECONOMIC AND SOCIAL COUNCIL**

**19 July 2012**

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**Tenth United Nations Conference on the  
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Item 11(e) of the provisional agenda\*

**Toponymic data files and gazetteers:**

**Data services, applications and products**

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

**Administrative Geographical Names Management System  
“Kumsugangsan 1.0”**

Submitted by Democratic People’s Republic of Korea\*\*

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\* E/CONF.101/1.

\*\* Submitted by: Democratic People’s Republic of Korea

**Administrative Geographical Names Management  
System “Kumsugangsan 1.0”**

**Democratic People’s Republic of Korea**

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## **Outline**

This paper outlines the methodology for designing and building of the Administrative Geographical Names Management System “Kumsugangsan 1.0” developed by the Geographical Names Committee of the Democratic People’s Republic of Korea after the 9th United Nations Conference on the Standardization of Geographical Names.

## **Administrative Geographical Names Management System**

The Geographical Names Committee of the Democratic People's Republic of Korea undertakes the management of and provides service for the administrative districts of the whole country and standardized geographical names under the Administrative Geographical Names Management System "Kumsugangsan 1.0" newly developed by overcoming the defects of the previous version.

Kumsugangsan 1.0 has been designed as follows:

1. It analyzed the country's administrative district and designed a space-time data model for a system managing administrative geographical names by GIS technology.
  - 1) The administrative district consists of second level, third level and fourth level systems.
    - ① Second level system: municipality – dong, ri  
e. g. Phangok-dong, Rason municipality
    - ② Third level system: province(municipality) – city, county(district), settlement (areas) – up, dong, ri  
e. g. Munhwa-dong, Hangu district, Nampho municipality
    - ③ Fourth level system: province – city – country(district) – ri, dong  
e. g. Yonggwang-dong, Sapho district, Hamhung city, South Hamgyong province

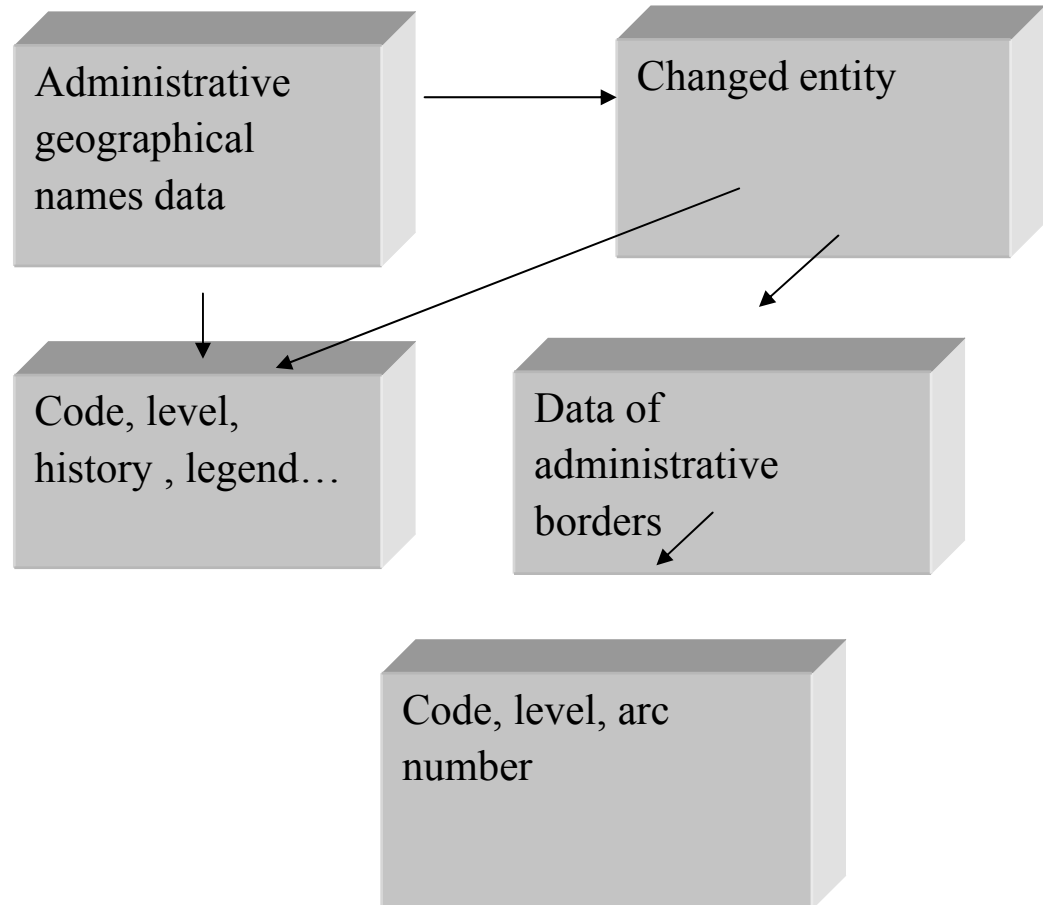
Taking this into consideration, an administrative district code is given 8-digit-number.

e. g. Rason-si, phan-gokdong 30000025

Migok-ri, Sariwon city, North Hwanghae Province 60200021

Phohang-dong, Sinam District, Chongjin City, North Hamgyong Province 90312021

2) The design of time-space data model for a system managing



2. For storage of space data, we have built the data base of administrative geographical names by using the MYSQL data base programmatically.

By developing a program for displaying data of administrative borders, we have built a data base of administrative borders on the basis of the data of administrative borders on a reduced scale of 1:25000. The data base of administrative borders has been turned into MYSAL data base programmatically by using Access.

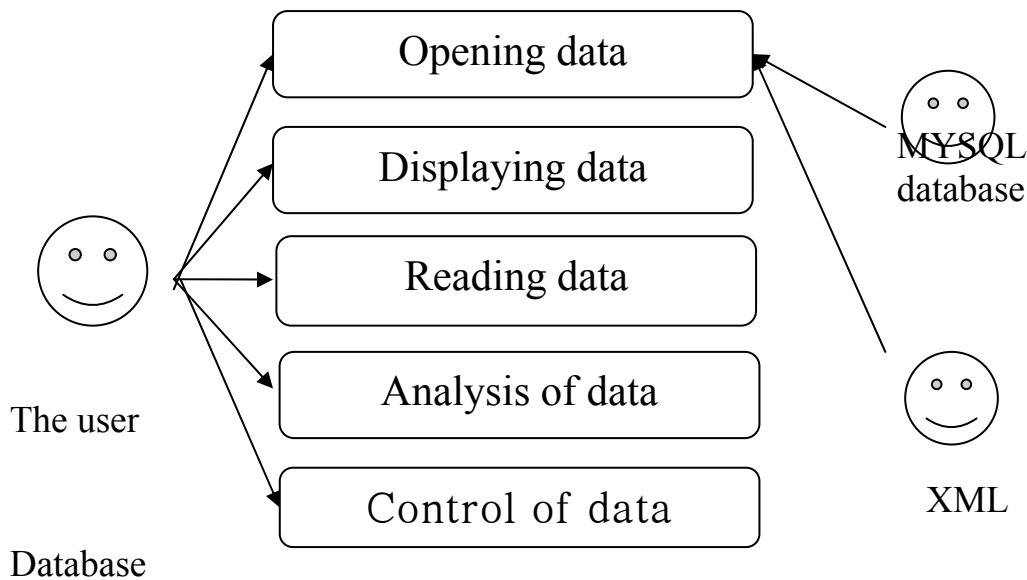
3. We have designed the Management System of Administrative Geographical Names “Kumsugangsan 1.0” by using Java and XML languages.

1) Specifications of “Kumsugangsan 1.0” are as follows;

- It is executable in all operational systems.
- It is accessible to administrative geographical names and administrative borders of different periods covering the whole country.
- It is multi-functional on various maps such transfer, expansion, reduction and etc.
- It is accessible to information on the attributes of the administrative geographical names (history of the names, legends, changes, geographical names in mother tongue, geographical names in foreign languages, the length of the administrative borders, the area of administrative districts and etc.)
- It can search for administrative geographical names.
- It has a function to manage a user’s information.

- It can add, delete and update administrative geographical names.
- It is possible to analyze space such distance and area.

## 2) Logical designing of a system by use of UML



## 3) Designing for the building of the system based on the MVC model

## 4) Designing and development of the interface.

The interface in the management system of the administrative geographical names is designed by the Top-Down-Right method. The interface is the class of the lowest level, being a class succeeding the J frame of the Java X, Swiss bibliotheca. Belonging to it are the Title panel class reflecting titles, the Place name panel class displaying

administrative geographical names, the Status panel class showing the status belt, the Menu panel class guiding to various functions, the Content panel class displaying the window of basic map and so on.

5) Designing and development of the module of border data display

The border data are the data of administrative borders covering the whole country. The database is loaded with place bound data in the form of space data. These data are read in the data base and displayed on the map display window of the interface.

6) Designing and development of the attribute reading function and analysis function.

– The function of displaying attributes of geographical names

As for the attributes of geographical names, when the mouse cursor is brought to the administrative geographical names displayed, algorithm is designed and developed in the form of window display. The process of carrying the data of attributes of geographical names from the data base to display is the same as this process of border data.

–The function of calculating distance and area

The distance from a selected point to a given point and the area can be calculated.

7) Designing and development of control function

a) The control function of users' information

b) The management function of administrative geographical names



### △ Searching

The addition of the thread process function has made the user's selection or input of the searching function and the display of its result smoother than before.

### △ Individual Control

Individual Control manages administrative geographical names and their attribute information by changing, deleting and adding geographical names, their history and attributes.

### △ Combined Control

Combined Control manages administrative geographical names in a comprehensive way, while performing the same function as that of individual control.

## 8) Designing and development of environmental building

As mentioned above, the Management system of the Administrative Geographical Names "Kumsugangsan 1.0" is to control and serve for the nation's overall administrative geographical names in all spheres and units. Saved in the current management system of administrative geographical names are more than 15,000 names.