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**Item 18 of the Provisional Agenda**

**Issues of toponymic standardization**

**Standardizing names of urban places and streets of Iran's cities for  
organizing into National Geographical Names Data Base\***

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## **In the name of God**

### **Standardizing names of urban places and streets of Iran's cities for organizing into National Geographical Names Data Base**

#### **Abstract**

Standardization of urban places and streets names is very important and essential. Multiplicity, diversity and density of geographical features of cities, on one hand, complexities of urban communication and traffic, on the other hand, enlighten the importance and sensibility of collecting urban features names.

Certainly, the use of standard names for elements and parts of a city plays an effective role in improving citizens' lifestyle especially in having access to and a better use of urban services and facilities.

Production of topographic maps in scale of 1:2000 from Iranian cities under the supervision of National Cartographic Center (NCC) of Iran created an opportunity to think about collecting geographical names data on urban features such as streets, districts and also urban centers and areas with different land use.

On this basis, to collect data about the names of urban streets and places in Iran and to organize the same in Geographical Names Database (GNDB), experts in NCC drafted a method in this regard to be used as a manual to collect and register standard names of urban features by different institutions chiefly by producers of maps and geospatial data.

#### **Introduction**

National Cartographic Center (NCC) of Iran operates since 2004 in the field of collecting and registering data on geographical names and organizing these data in Iranian National Geographical Names Data Base (INGNDB). Land cover maps of the country in scale of 1:25000 are the data source of geographical names database. The names of features in these maps along with transcriptions and other descriptive data are registered and stored in the database. This is the most important step in standardizing geographical names at national level. Names already entered to the database cover more than 90% of the country's lands.

In addition to this, with the quick increase in number and size of Iranian cities in recent years, necessity of collecting and registering geographical data was more obvious than ever in order to produce urban maps and create urban databases. For this reason, the plan of collection and registration of geographical names for the features existing in maps in scale of 1:2000 from Iranian cities was suggested by the experts working in NCC. By executing this plan, map and geographical data producers all over the country will be able to use equal names in creating thematic maps and urban atlases. Meanwhile, urban management authorities can use standard names as a key to identify correctly and immediately urban centers and streets and also ensure interoperation between different geographical names databases. In addition to this, urban geographical names databases can help urban managers and planners to do and react immediately and more effectively in providing services, maintaining and developing urban infrastructures and also managing urban disasters.

#### **Quality of attribute data in urban maps**

During mapping in order to conserve the precision of geometrical data, several instructions and executive methods have been drafted and offered. In different cases such as integrity, correctness and precision of geometrical and graphical data are monitored and controlled. To that effect, it is inevitable to predict control mechanisms in order to conserve validity and precision of attribute data. So, it deems necessary to take measures to conserve the quality of geographical names data in urban maps in scale of 1:2000, and to set up clauses and principles for collection and

registration of urban places and streets names. Negative consequences of ignoring standardization of features names in urban base maps can become more intense in further stages, because errors and mistakes existing in the reference map will be transferred into derived maps (like: tourist maps, urban traffic index maps).

On the other hand, registration of geographical names with written Persian alphabets can create difficulties. Diversity and variety in registering and using geographical names can be due to lack of accents in letters, various transcriptions for a single letter, a single transcription for several letters, various forms in writing a letter, much apparent similarities between certain letters, and illegibility of some letters in words.

These difficulties will lead to difference in writing and also the way of pronouncing geographical names in urban maps. In most cases, duality and sometimes plurality of the name of urban places and streets create many difficulties for municipalities and urban-related authorities.

To remove such difficulties and ensure the quality of attribute data in large scale urban maps, the NCC intends to execute the plan of standardizing names of urban places and streets to reach following objectives:

- Collection of streets and urban places names in the country along with their transcription.
- Correction and processing descriptive data in urban maps.
- Correct and documented registration of urban streets and places in order to prevent any confusion or dissimilarity in them.
- Accurate and correct orientation of users especially tourists in finding urban centers and areas (through transcription and romanization of names).
- Standardization and unification of places and streets names in all kinds of map products, deeds and documents.
- Concentrate supervision over institutions responsible for toponymy.
- Addition of data about the names of urban places and streets into Iranian National Geographical Names Database.
- Application of correct transcript names according to Iranian transcription system approved by Iranian Committee on the Standardization of Geographical Names (ICSGN) in Geographical Information Systems (GIS) as well as Land Information Systems (LIS).

#### **Digital data registration (digital clarification of features)**

During collection and registration of urban places and streets names, digital registration via special software and hardware will be used. Traditional registration method of attribute data was based on annotation in manuscript on aerial photographs or paper map plots. In the traditional method, density and compactness of geographical features in urban areas complicated classification and toponymy. What's more, inappropriate writing of descriptive data by field operator caused many errors in clarification of features.

In digital data registration, operator registers and records geographical names data during field work via GIS-based software. User interfaces defined in the software offer necessary windows to the field operator to enter data using standard fonts and register in attributes tables. Urban streets or places coordinates can be registered in real time via GPS in relevant data tables. In this software, multimedia capabilities are used to save sound and image. These new capabilities help operator to accurately and correctly save sounds and transcripts and to take photos from the names written in signs or those existing in deeds and documents.

In digital registration method, a portable PC with an anti-reflex touch screen is used.

This method facilitates further processing, transferring gathered data to maps and databases, also monitoring and controlling quality of data.

### **Manual for collecting and registering urban places and streets names**

In this manual, spatial features were analyzed in six main classes of administrative area, hypsography, hydrography, vegetation, transportation, and general human features according to features classification in INGNDDB. In addition, 145 selected features types were defined scientifically. Principal topics taken into consideration in this method are as follows:

- Scientific and specialty conditions of workforce responsible for data collecting and registering.
- Necessary equipment
- Specifications of base map
- Features list
- Sources of name collection
- Method of writing and registering names (particularly, special names of some urban centers and streets)
- Criteria of identifying the type of urban roads
- Method of names placement on a map according to the form of graphical symbols on the map
- Method of names placement in urban crossroads
- Data related to geographical names including feature type, feature name in Persian, transcription, feature name in English, other name, old name, and sheet number of the urban map in scale of 1:2000 containing that feature.
- Prioritizing cities to collect and register places and streets names in order of metropolitans, province center (first level administrative division), county center (second level administrative division), district center (third level administrative division) and urban points.

### **Conclusion**

Quality of geographical data especially geographical names is an important issue which shall be considered by both map and spatial data producers and users. Standardization of geographical names is among the priorities of the institution responsible for registering geographical names in every country. Other apparatus and institutions dealing with geographical names shall respect requirements relating to the correct writing and registering of these names.

Iranian Committee on the Standardization of Geographical Names (ICSGN) and also National Cartographic Center of Iran intend, following topics related to standardization of geographical names, to organize collection and registration of geographical names at national level and to create a national database to facilitate for users access to correct and official geographical names. Drafting a manual of collecting and registering Iranian urban places and streets names is a great step to disseminate and promote the culture of producing and using standard geographical names in urbanism.