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TOPONYMIC DATA FILES: AUTOMATED DATA-PROCESSING (ADP) SYSTEMS

State catalogue of geographical names of Russian Federation

(Current status and future development)

(Submitted by Russia)* *

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** Prepared by Federal Service of Geodesy and Cartography of the Russian Federation (Roscartography)

STATE CATALOGUE OF GEOGRAPHICAL NAMES OF RUSSIAN FEDERATION

(Current status and future development)

RESUME

For the purpose of providing unified and consistent use of geographical names in the Russian Federation and storing them, the Federal Law "On naming geographical features" adopted in 1997 stipulated development of the State Catalogue of Geographical Names. Special federal authority on geographical narnes is entrusted with the task to develop and maintain the State Catalogue. In 1998 the Decree of the Government of the Russian Federation determined the Federal Service for Geodesy and Cartography (Roscartography) as such an authority.

The State Catalogue shall be permanently updated state-of-the-art database of geographical names and accompanied information in a volume of the state topographic map at scale 1: 100 000 and smaller. The Catalogue shall meet the needs of federal administrative authorities, the authorities of the Federation subjects, local administrations, agencies, mass media and all interested in getting official information on geographical names. Standardized geographical names registered in the State Catalogue shall be mandatory for legal documents, official correspondence, maps, publications, and mass media

The cornputer State Catalogue of Geographical Names will be developed in the official language of the Russian Federation (the Russian language.)

In 2000 development of the automated retrieval system for geographical names was accomplished. The paper describes information support of the system, its soft- and hardware.

In 2001 the computer data retrieval system was tested and debugged with a given data array. At the stage of beta-testing of the system, data array including more than 235 000 parameters of 8 500 place names for six subjects of the Russian Federation was input in the database..

It was decided to engage air survey and geodetic facilities of Roscartography in development and maintenance of the Catalogue on production basis since 2002. The paper contains the program for the Catalogue development in 2002, 2003. Researches will be further continued to upgrade the system functionality and widen its tasks.

For the purpose of providing unified and consistent use of geographical names in the Russian Federation and storing them the Federal Law "On naming geographical features" adopted in 1997 stipulated development of the State Catalogue of Geographical Names. Special federal authority on geographical names is entrusted with the task to develop and maintain the State Catalogue. In 1998 the Decree of the Government of the Russian Federation determined the Federal Service of Geodesy and Cartography (Roscartography) as such an authority.

In July of 2000 the Decree of the Russian Federation adopted the procedure for registration of geographical names, development and maintenance of the State Catalogue of Geographical Names. Under the Decree the State Catalogue shall be permanently updated state-of-the-art database of geographical names and accompanied information. The Catalogue shall meet the needs of federal administrative authorities, the authorities of the Federation subjects, local administrations, agencies, mass media and all interested in getting official information on geographical names. Standardized geographical names registered in the State Catalogue shall be mandatory for legal documents, official correspondence, maps, publications, and mass media.

The Decree of the Government "On Adopting the Statute of registration of geographical names, publication of gazetteers and references on geographical names, development and maintenance of the State Catalogue of Geographical Names" determines that the computer State Catalogue of Geographical Names shall be developed in the official language of the Russian Federation (the Russian language.)

The investigation carried out in the Central Research Institute of Geodesy and Cartography (CNIIGAiK) on an errand of Roscartography revealed that registering geographical names taken from the state topographic map at scale 1:100,000 and smaller would meet national demands in the information of the kind. Names of less considerable geographic features are needed at the local or departmental level.

At the estimations made, the State Catalogue of Geographical Names based on the map at scale 1:100 000 shall comprise about 2 500 000 names and the accompanying information. To store, update, process the data available in the Catalogue and to quickly output it at the users' queries, the database management system was to be developed.

In 2000 the experts of CNIIGAiK completed development of the system. The system provides for automation of the following procedures:
- input of the data in the database (DB);
- registration of standardized geographical names (assignment of registration numbers) ;
- data storage in the database;
- maintenance of the database (complimenting the database with new geographical names, detailing the already available information);
- data processing and responding to the users' queries .

Information support, soft- and hardware were developed in course of the DB management system implementation.

Information support of the system is a set of documents, codes and data arrays together with some ways of their structuring, storage and verification

28 fields of geographical name data were determined.

The State Catalogue comprises the following data mandatory for recording and state registration of standardized place-names:
- state registration number for the Russian standardized names together with a date of registration;
- name of geographical feature in the standardized Russian spelling together with a source the name is taken from and a date of name approvai;
- generic term together with a source the term is taken from and a date the term is approved (the Catalogue involves more than 250 term types);
- current availability;

- for populated places – their type and administrative status;

- geographical and administrative reference of a geographical feature together with a source the information is taken from and a date it is approved;
-geo-coordinates of geographical feature (latitude, longitude).

In addition to the mentioned basic data the Catalogue contains subsidiary information on names (variants of geographical names and generic terms, name etymology or feature origin. etc.)

The software of the system is a set of programming means which provide its work. The system soft is developed on the base of Oracle DBMS, version 7.3 with OS Windows NT Server, version 4.0 SP3, programming language PL/SQL for Oracle 7, and MS Access – for working stations performance.

The hardware of the system is a set of technical means to input, store, process and output data when the system is functioning. The system hardware inciudes:
- network server hosted on Pentium III-866/512 Mb/6Gb+2*10.5 Gb/CD-ROM;
- five working stations hosted on Pentium III-550/128Mb/6Gb with 17" displays;
- administrator working station hosted on Pentium III-450/256Mb/9Gb with 17" displays;
- local network based on winded pair of Category 5, combining the PCs, and concentrator Compex EtherNetHub TP10/100 for 16 operators;
- network laser printer OkiLaser 6 Wni accessible from each working station;
- CD writer and Iomega ZiP 100 backup device instaiied on the administrator working station.

Within the system, continuous communication between the server and working stations is provided. All the working stations could function simultaneously when accessing the database.

Scheme of the hardware structure
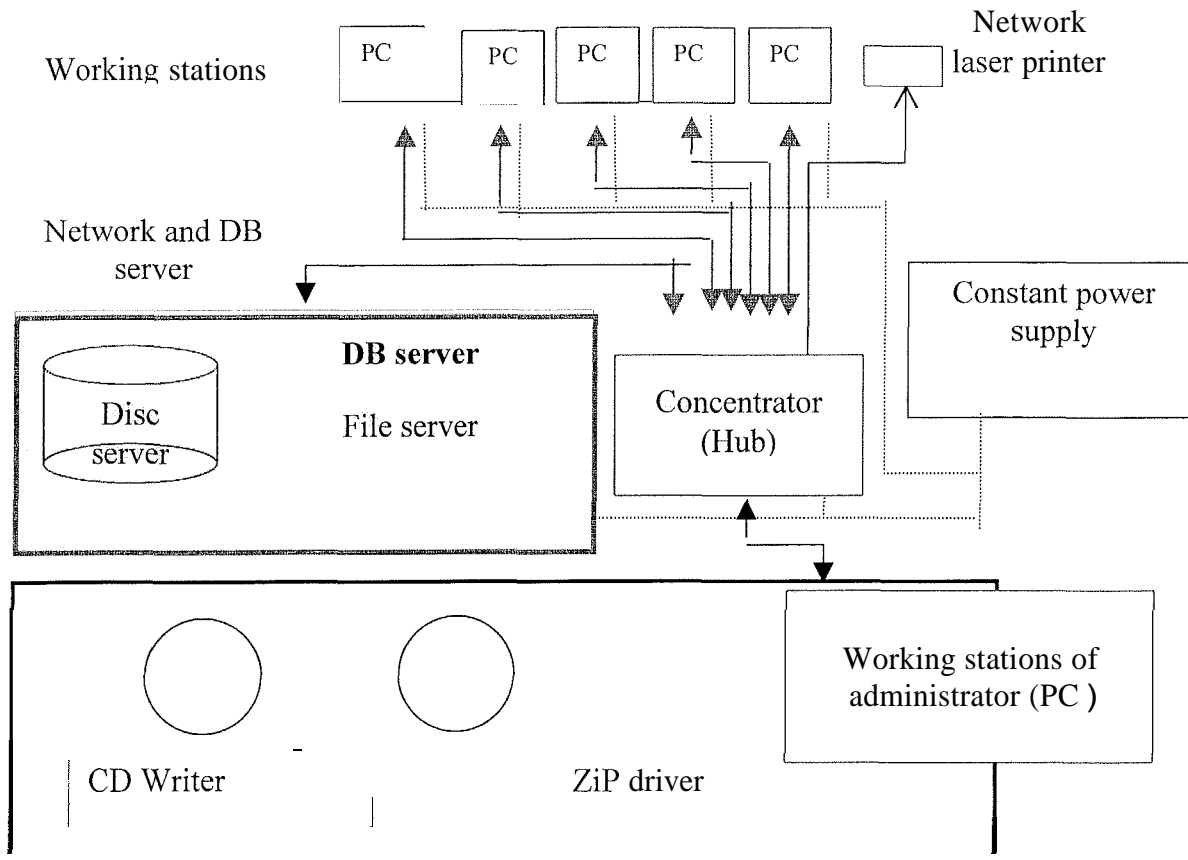
The developed computer data retrieval system provides for the following sequence of the State Catalogue database compilation:

- preparation of data to be input into PC including getting data from various cartographic, legal and reference sources, inventory of the data, putting it in a specific registration form (see Appendix 1);
- data input in PC, its automated transmission into the database and registration of standardized geographical names;
- data storage in the database;

- database maintenance (complimenting it with new geographical names and accompanying information, correction of the input data);

- processing of the data available in the database per the determined 25 query types of the users (see Appendix 2) with outputting the responses on the screen or for printing in 23 form types. In future, query types will be upgraded.

Data input, its processing, output, the database maintenance and check-up functions are performed on working stations in dialog mode with a set of controls. Multi-level security of the system from unauthorized access is provided as well.

In 2001 the computer data retrieval system developed in CNIIGAiK was tested and debugged with a given data array. A group of experts got special training in development and maintenance of the State Catalogue on Geographical Names. At the stage of beta-testing of the system, data array including more than 235 000 parameters of 8 500 place names for six subjects of the Russian Federation –

Rjazanskaja, Vladimirskaja, Ivanovskaja, Kostromskaja, Voronežskaja and Jaroslavskaja oblast' was input in the database.

Samples of the data registered in the State Catalogue of Geographical Names are given in Appendix 3.

Estimation of time made in course of beta-testing proves that the system allows processing the data available in the database and outputting a response to any of 25 query types in between 3 and 15 seconds. Not more than 25 seconds are required to compile a general list of place-names for a subject of the Russian Federation. It takes up to 2 minutes to get an alphabetic list of names for geographical features of a given type. So the system allows to quickly provide information on geographical names.

Time required to input the data from registration form takes between 2 and 12 minutes depending on the data volume. Such high speed of input is achieved by automated generation of some parameters and by use of classifiers in "selection type" field mode.

Data collection, its inventory and putting into registration forms take most efforts and time. It takes from 10 minutes up to 1 hour to fill one registration form.

Roscartography approved the results achieved in beta-testing of the system and recommended the data retrieval system for developing and maintaining the State Catalogue of Geographical Names since 2002 according to the Federal Law "On naming geographical features".

To accelerate the Catalogue development it is planned for the facilities of Roscartography engaged in air-and geodetic survey to take part in this work for the zones of their activity. For this purpose CNIIGAiK is to develop appropriate software for inputting the data in computers on spots, exporting it in CNIIGAiK on CDs to be verified and input in the database of the State Catalogue and subsequent importing the registered data to the appropriate facility for practical use.

In 2002 under supervision of CNIIGAiK three facilities of Roscartography are involved in experimental preparation of the source data to be input in the DB of the Catalogue. The experiment is to provide some experience in selection and training of the staff for work on geographical names, to develop technological cycle and appropriate production rates, and to solve some administrative problems. This will allow engaging the other facilities in the Catalogue development on production basis since 2003.

In 2003 it is planned to develop and adopt "Statute of the State Catalogue of Geographical Names of the Russian Federation", guidelines for maintenance of the catalogue and providing the users with the information available in it.

Since 2002 all the official changes in the geographical names on the territory of the Russian Federation are registered in the Catalogue. Based on the Catalogue, bulletins devoted to all changes in the Russian geographical names will be released on regular basis.

Simultaneously with compiling and maintaining the Catalogue, some investigations are carried out to upgrade the functionality of the computer system and the range of the tasks it will cope with – output of computer map images, communication with the users e.g., via Internet, use of digital maps to extract toponymic data to enrich the database, use of the Catalogue to update maps at different scales, and so on.

State Catalogue of Geographical Names of Russia
UNIFIED REGISTRATION FORM FOR GEOGRAPHICAL NAMES

1. Basic information:

(01) Standardized name	
(02) Source the standardized name is taken from	
(03) Date of name approval	
(04) Generic term	(05) Current availability of geo feature
(06) Source the generic term is taken from	
(07) Date of generic term approval	(08) Admin. status (for popul. places)

Administrative and geographical reference

(09) Name of subject of Russian Federation	
(10) Name of administrative district	

Geographical coordinates:

(11) Latitude	(12) Longitude

(13) Geo reference (in relation to other geo features)	

2. Complementary information:

(14) Name variants	(15) Source the name variant occurred in	(16) Date of name variant occurrence	(17) Date when the name was officially changed

(18) Generic tern variants	(19) Source the generic term occurred in	(20) Date of the generic term occurrence

(21) Notes

№	SPECIFIED QUERY TYPES Output on screen or printer:
1	2
1.	Alphabetic list of standardized geographical names for the territory of a determined subject of Russian Federation
2.	Alphabetic list of standardized geographical names for a determined administrative district of Russian Federation
3.	Alphabetic list of standardized geographical names from a determined map sheet at scale 1:100,000
4.	Alphabetic list of standardized geographical names of Russian Federation with a determined generic terin
5.	Alphabetic list of earlier existing geographical names with a determined generic term
6.	Alphabetic list of standardized geographical names with a determined generic term located on a determined subject of Russian Federation
7.	Alphabetic list of standardized geographical names with a determined generic terin for a determined administrative district of a give subject of Russian Federation
8.	Alphabetic list of standardized geographical names with a deterinined generic term from a determined map sheet at scale 1:100,000
9.	List of geographical names registered in the State Catalogue homonymous with a determined name
10.	List of geographical names registered in the State Catalogue homonymous with a determined name for a determined subject of Russian Federation
11.	List of geographical naines registered in the State Catalogue homonymous with a determined name for a determined administrative district in a given subject of Russian Federation
12.	List of geographical names with a determined generic term registered in the State Catalogue homonymous with a detennined name
13.	Information on a determined geographical name with a given generic terin located in a given subject of Russian Federation
14.	Information on a determined geographical name with a given generic term located in a given administrative district of Russian Federation
15.	List of geographical names for Russian Federation which have been changed within a determined time period (in alphabetic order of old names)
16.	List of geographical names for Russian Federation which have been changed within a determined time period (in alphabetic order of new names)
17.	Information on number of geographical names registered in the State Catalogue within a determined time period
18.	Any information on standardized geographical name with a determined registration number available in the Catalogue Registration Form
19.	Any information on a determined standardized geographical name of a given feature type for a given subject of Russian Federation available in the Catalogue Registration Form
20.	Any information on a determined standardized geographical name of a given feature type for a given administrative district of Russian Federation available in the Catalogue Registration Form
21-25	Lists of standardized geographical names (for a subject of Russian Federation or its administrative district) compiled by a determined portion of geographical name and generic terin

Appendix *3*

State Catalogue of Geographical Names of Russian Federatioii

FWGISTRATION FORM

1.Basic information:

Registration number of standardized name | **0008606** | Registration date | **06/11/2001**

Standardized name | **Сорочинка**

Source the standardized name is taken from | Списки центров сельсоветов Тульской области, 1960

Date of name approval | 31/12/1960

Generic tern | село | Current availability of geo f atui | существует

Source the generic term is taken from | Списки центров сельсоветов Тульской области, 1960

Date of generic term approval | 31/12/1960 | / ii status (for popul. la | Центр сельской адм.

Administrative and geographical reference

Name of subject of Russian Federation	Source the standardized name of the RF subject is taken from	Date of the standardized name of the RF subject occurrence
Тульская область.	Постановление ЦИК СССР от 26/09/1937	26/09/1937

Name of administrative district	Source the standardized name of the RF administrative district is taken from	Date of the standardized name of the RF admin. district occurrence
Плавский район	Справочник административно-территориального деления Тульской области, 2000	31/12/1960

Geo coordinates of feature | Latitude 53⁰41' С.Ш. | Longitude 37⁰27' В.Д.

Г of map at scale1:1С 000 | N-37-75

Geo reference (*in relation t* other geo ;)

Name variants	Source the narne variant occurred in	Date of name variant occurrence	Date when the name was officially changed
Сорочинка-Михнево	Списки центров сельсоветов Тульской области, 1955; Справочник административно-территориального деления Тульской области, 1956; Алфавитный список почтовых предприятий СССР, 1966	31/12/1955	
Сорчинский	Списки центров сельсоветов Тульской области, 1939	31/12/1939	
Сорочина	Материалы переписи населения, 1939	31/12/1939	

Generic term variants	Source the generic term occurred in	Date of the generic term occurrence

Notes:
Сорочинский сельский округ; Доп. источники норм. названия:Важнейшие селения Европейской России, 1880; Алфавитный список почтовых предприятий СССР, 1938; 1955; N 37-75/1942; 1951; 1958; 1970; 1983; N-37/1943;1952; Административная карта Тульской области, 1953; 1959; 1968; Справочник административно-территориального деления Тульской области, 1966; 1971; 2000