AMERICAN JOURNALS
Open Access, Peer Reviewed Journals

American Journal of Technology and Applied Sciences
ISSN (E): 2832-1766| Volume 19, December, 2023

THE GEODETIC BASIS FOR CREATING THEMATIC MAPS OF THE POPULATION AND TRADITIONAL AND MODERN METHODS OF DRAWING UP CARDS

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A B S T R A C T

In this article, the use of the knowledge base as well as the database for the creation of electronic dynamic cards of the population of Fergana region, and the study of types that have not been well studied so far, the acceptance of data in the case of establishing a geodetic basis, this issue is urgent. one of the issues, and researchers in recent years have taken not only the improvement of electronic card creation technology, but also prevention of "bad" card creation as the main goal.

K E Y W O R D S

Map, geoinformation systems, GPS receivers, geodetic base points, geodetic grid, geodetic base, latitude, longitude, abscissa, ordinate, creating a geodatabase.

Introduction

Any card is built on a certain mathematical basis. The mathematical basis of the card is to find content from a set of mathematical elements of the card, which determine the mathematical connection between the surface on which they are being described and the card. The projection, scale, geodesic basis, as well as the komponovka and razgrafka system are the mathematical basis elements of the card. Each of these elements is of great importance in the creation of Cards, which make it possible to describe the surface of the Earth correctly and accurately based on a certain mathematical law and rule in the plane. On the basis of all cards lies a certain projection, and these projections are formed from cartographic nets. A scale is chosen based on the territory of the cards and their purpose, and the size or size of the scale is determined [1-3].

THE MAIN PART

Another muxim element of the mathematical basis of Cards is the geodesic basis, through which the geodesic works performed in the field, that is, the position, height and coordinates of objects and other recommendations, are determined.

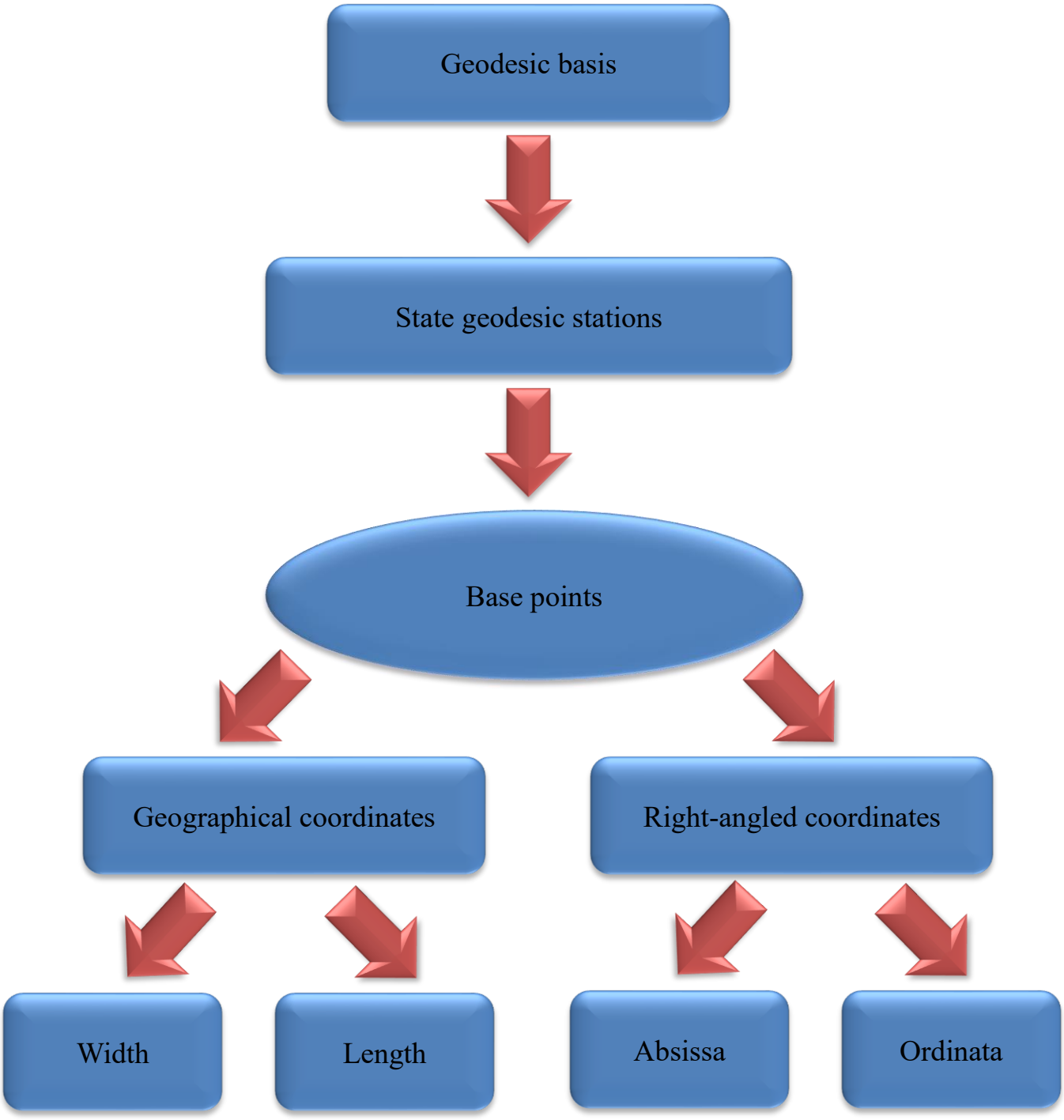

Figure 1. The founders of the geodesic Foundation.

Like all theme cards, the geodesic basis in population Cards is manifested mainly through geographical coordinates. In it, latitudes and distances form a cartographic grid (figure 21).

Currently, as a result of the development of geoaxborot technologies and geodesic instruments, there is a division through satellites with a large database in hajm. Information from all over the Earth is

being received through the Landsat system, which is considered one of the developed satellites. Landsat-1, Landsat-2 and hakozo Landsat-9 are in operation. Landsat is a U.S. satellite system designed to repeatedly monitor the global Earth's surface on a moderate scale. Data is obtained from satellite signals [4-10].

Figure 2. Earth photography process on Landsat-8 satellite.

In addition GPS (Global Positioning System "Global Positioning System") navigators operating on the basis of satellite data are also widely used in the world. GPS navigators are used for the purpose of finding the destination quickly and accurately, in addition to smartphones, in cars, including ambulances (figure 2).https://mssglonass.ru/

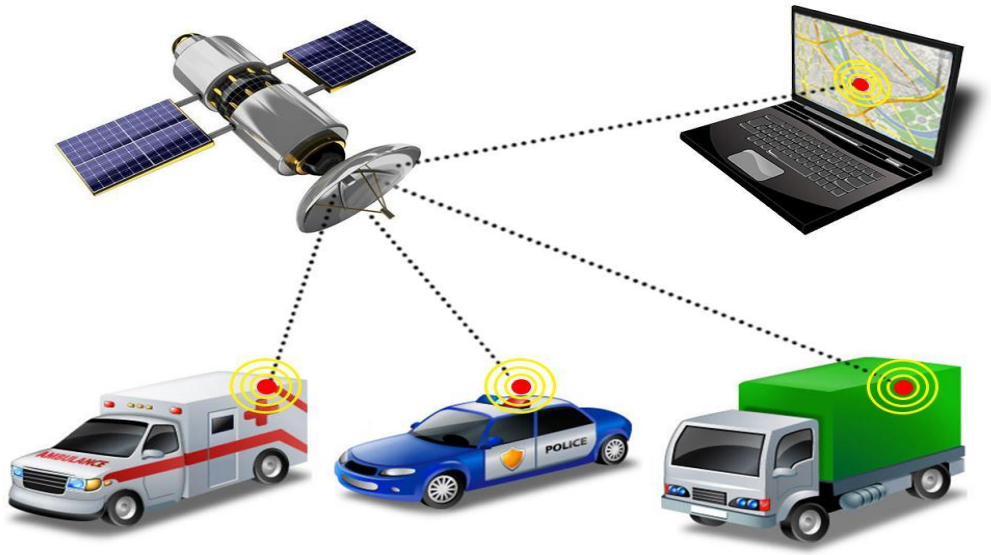

Figure 3. Using satellite data for various purposes in GPS navigators

Currently, databases of all e-cards, namely Yandex, Google map, Open Street Map, are regularly updated on the basis of satellite data. It is inertial and serves as the basis for the creation of other digital cards. (newly added)

Population cards, which are among the socio-economic cards, describe a wide variety of information regarding the population. They are created for different purposes scientific, scientific reference, educational, popular and are reflected in separate, complex ways and atlases. Our country has a unique history and experience in creating population cards

In the process of preparing population cards, various technologies are used. Which one technology is fast and cheap depends on the technical support of the cartographic enterprise. During the creation of the card, it is possible to use the photomechanical method in some manual work and improve the quality of work and perform faster with automation or computer application.

The process of creating cards was until recently carried out in an A'nawi way. That is, the process of creating a card took a long time and a large amount of money. Over the years, as a result of the slow development of techniques and technologies, these works began to be carried out directly on computers [11-16].

The systematic process of creating socio-economic cards and atlases reveals the effectiveness of the use of modern methods and tools for various purposes, primarily GAT technologies. Computer-aided design and card-taking methods usually repeat all the steps inherent in the traditional technology of card-taking. But at each stage, starting with the collection of data, important features appear.

V.T.As Zhukov [1999] shows, the information base of most of the socio-economic cards and atlases is formed on the basis of Cards related to the population and population. Previously, card making was done by hand, requiring a lot of time and money, while repeatedly checking and correcting copied information, making tables, and then transferring it to a cartographic view.

Scientists [Gulyamova, Rakhmonov, Sattiyev, 2015; Yevteyev, 1999; Zhukov, 1999; Kapralov, 2010; Gulyamova, 2020;] paid attention to the fact that at the stage of development of a card or Atlas in computer technologies, as elements and edges of a single territorial complex, it is possible to create a complete database of mutually agreed information covering all aspects and aspects of the characteristics of objects on the card.

In modern methods, all the source data used to build a card, including statistics, allgeographic and thematic cards, remote sensing materials, etc., form a single digital environment in a cartographic base that allows any automated processing. Such an approach ensures the implementation of editing and card capture processes, as well as the implementation of modeling.

Most importantly, it involves the processing of primary data, which includes the work carried out by geoaxborot systems related to databases, that is, data collection and sorting, interaction with spatial attributes of card retrieval objects, spatial-temporal generalization of data, interpolation of fields and time intervals, recovery of missing data [17-20].

These tasks are combined in cybernetics with the process of creating an automated card called data visualization. This is largely due to the characteristics of the technical and software, and,

like previous actions, is carried out in vector or raster mode. In the best electronic devices with high resolution, the card can be reproduced in any way that exceeds the requirements of traditional compilation and publication.

The card compilation of Computer Technologies is much more simplified and allows you to store separately (in a special information layer of the database) and, if necessary, increase any element of the geographical basis and thematic content. The result allows you to include any layer of information in the thematic composition of the geographical basis and card. It quickly combines any combination of allgeographic and thematic information elements displayed on the card into a cartographic image on the display screen using any image and color design methods.

In their work, Yevteyev [1999; Zhukov 1999; Kapralov, 2010] noted the creative process of automated card capture - a multifaceted, and to the most advantage of this, that is, the cartographer can create several cards in a short time and within them choose the most suitable, complete and accurate for card capture purposes.

Automation tools are widely used when obtaining a population location on a card, which significantly speeds up the development of cards, since the registration of the population itself and the creation of appropriate databases are often organized in accordance with the conditional regular network of territorial divisions.

Computer atlases of the population have been created in a number of countries (USA, UK, Sweden, Switzerland, etc. At the same time, the use of regular networks leads to the loss of the features of the territorial organization of the population, and the geographical processing of such Cards is required.

Great progress was made on the population distribution card of the population and the area in avia and, in particular, satellite photography. For example, in the work of Yevteyev [1999], Gulyamova [1995], remote survey data helps to determine in more detail the contours and territories (by the nature of land use and development), sometimes to clarify the distribution of the population in statistical accounting cells.

The main part of the sources of drawing up population Cards is provided by the State Statistics Committee: the main content of population Cards is made up of digital data. Because, the population is a rapidly changing process at the expense of birth and death. At the same time, it is difficult to obtain accurate data on the population. Perfect population information can be obtained after the population is transferred to the census. The last census in our country in the former Union was conducted in 1989. The employment of the population in the economy as a whole in the national economy is characterized only by the Republic, regions and raions, which is absolutely not enough to get a detailed card. Available statistical materials provide cards of Population migration and migration links. However, they are also not covered in sufficient detail: for the whole country - only the Republic, regions and the largest cities reflect the data. In the case of a regional card, these data can be detailed based on local statistics.

One of the modern ways to get a population on a card is to get an electronic card. On the basis of electronic cards lies communication, that is, the card maker finds the necessary information through the search engine and turns them into an image, that is, a card. When performing such a task, a number of requirements are imposed: the search engine must take questions

continuously and turn them into a systematic image, and these images must have a variable nature depending on the information requested, sort the data depending on the purpose, and quickly find this information. Currently, the task of increasing the number of electronic card creation services based on geoaxborot systems is relevant. Most importantly, it is advisable to carry out these tasks, having received answers to questions about who, what information and cards are needed. Taking into account the purpose of using cards, it is also necessary to study the questions of what information is obtained from them and what tasks are solved with them. Some issues of the creation of electronic cards in the study and examination of issues related to the population of the Republic of Uzbekistan. In this case, the question arises of what information is initially required when studying and checking the issues related to the population of the Republic of Uzbekistan. The territorial distribution of the population is of a very complex nature and, relying on various approaches, its verification requires specific spatial and time-dependent information. These data occupy three main areas of knowledge, as Gulyamova [1995] shows:

a) the area of chronology, checked by a measure of time;
b) the Territorial Area, is checked by spatial measurement;
v) the Ontology space is examined by means of a measure of meaning.

The following approaches are often used in this:

a) comparison-geographical,
b) genetic,
v) Bixioviristic,
g) territorial-spatial,
d) historical,
y) space - time dependent,
j) cognitive.

According to its theoretical approach, the demand for information that is important above is changing, and the laws and rules for sorting them are also different from each other. Therefore, it is necessary to use the database array knowledge base to create electronic - dynamic cards of the population. So far, this issue has not been well studied, and such scientific case studies are rare. But this issue is one of the pressing issues, and researchers understand that in recent years it is the main goal not only to improve the technology of creating an electronic card, but also to prevent the creation of a “bad” card [21-24].

Today, there are various technical solutions for converting spatial data into images, for example, Google Map, online GIS provides some services. These will help you answer simple questions, for example, find an image of a place and provide you with tools for working with it. It is possible to create a number of cards on the population of the Republic of Uzbekistan through the database in nternet. In order not to have trouble finding the necessary information when drawing up population cards, it is considered very important to create a separate database on the population. A database is a dataset designed to use modern information technology to provide territorial verification and conclusions. The following requirements are imposed on the creation of this database:

1. They are stored together with spatial data;
2. To be consistent with different studies;
3. Convenient to keep up to date;
4. It should be understandable and easy for users of different industries.

Such a database has not yet been built in Uzbekistan. Currently, the data is spread across various organizations and in different places. Most importantly, they are not associated with territorial data. It is from the main tasks to summarize such data and create a database through them. In the example of the Republic of Uzbekistan, the general model of the population database is hierarchical, in which several indicators of the population of the Republic, Region, District, City or village Kham are reflected. Creating a database on the population is a complex task. It covers a wide range of tasks to include. With the help of the database, it will be necessary to obtain data on the population at any time. Because, the information contained in it must be monitored and updated by the State Statistics Committee. This information will be summarized throughout the Republic. That is, by region, the number of inhabitants of a neighborhood, village or city, district, region and Republic, national composition, age, gender, religion, employment level of akholini, etc. There should be no difficulty in obtaining information that is a link to the population. The structure of this database consists of several tiers, which are created with an emphasis on administrative and godly division. Information needs are based on their detail, subject, scale, modernity and updating laws. While the extensibility to information on the same topic is the same, different requirements are placed on their completeness. For this reason, it is necessary to create a set of data with several steps. The database, which consists of several blocks, covers the following topics:

1. Demographics: population, its national, age-gender composition, etc;
2. Production: employment of the population in production, share of working people;
3. Social issues: amount and distribution of income, pace of change, source of income;
4. Features of the place: natural conditions and resources, water, surface and subsurface Resources, Climate, Etc;
5. Systems and types of settlement, traditions of change, interdependence.

CONCLUSION

Having studied the geography and cartography of the population from a theoretical and practical nature as a basis for creating thematic cards of the population, kholda studied how important it is to create a geodetic basis for the requirements for them, apply GPS prionics to the field, rationally apply modern Geodetic instruments, and studied population information and ways to create

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