THE USE OF MAPINFO PROGRAM METHODS IN THE CREATION OF CADASTRAL CARDS

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Abstract. Compilation of cadastral cards, "Individual values" "Otdeleniye znacheniya" method; to the method of cartograms - "Range of values" "Diapazoni znacheniy"; to the method of points - "Density of points" "Plotnosto tochek"; to the character method — "Dimensional characters" "Dimensional symbol"; to the method of isolines - "Surface" "Poverkhnosto"; "Stolbchatiye i krugoviye diagrammi" corresponds to the method of card diagrams - "Column and circular diagrams". Information on the process of creating thematic layers and the creation of maps of our republic with hydrological content is given.

Keywords: *GIS, cadastral maps, MapInfo, Range of values, Point density, Dimensional symbols.*

ИСПОЛЬЗОВАНИЕ МЕТОДОВ ПРОГРАММЫ MAPINFO ПРИ СОЗДАНИИ КАДАСТРОВЫХ КАРТ

Аннотация. Составление кадастровых карт, "Индивидуальные ценности" методом "Отделение значений"; методу картограмм - "Диапазон значений" "Диапазоны значений"; методу точек - "Плотность точек" "Плотность точек"; символьному методу — «Объемные символы» «Объемный символ»; методу изолиний - "Поверхность" "Поверхность"; «Столбчатые и круговые диаграммы» соответствуют методу карточных диаграмм - «Столбчатые и круговые диаграммы». Дана информация о процессе создания тематических слоев и создания карт нашей республики с гидрологическим содержанием.

Ключевые слова: ГИС, кадастровые карты, MapInfo, Диапазон значений, Плотность точек, Размерные символы.

INTRODUCTION

In modern GIS technologies, very effective and complete tools for the creation of cadastral maps and plans are specialized software and hardware systems, below we call them automated systems of cadastral cartography.[1,3,5]

After the creation of a database about the area during the creation of cadastral cards, information (attributive information) is given to the objects depending on their subject. Tables related to them are filled in, after which the thematic layers of the card are directly created. It is known that currently there are 11 methods of representation in cartography[2,4,6,7,8,9]:

✓ Character method;
✓ Point method;
✓ Method of isolines;
✓ Method of areas;

- ✓ Quality color method;
- ✓ Quantitative color method;
- ✓ Cartogram method;
- ✓ Cartographic method;
- ✓ The method of diagrams belonging to a place;
- ✓ The method of characters in action;
- ✓ Line marking method;

METHODS

Quality color method in MapInfo program — "Individual values" "Otdeleniye znacheniya" method; to the method of cartograms - "Range of values" "Diapazoni znacheniy"; to the method of points - "Density of points" "Plotnosto tochek"; to the character method — "Dimensional characters" "Dimensional symbol"; to the method of isolines - "Surface" "Poverkhnosto"; "Stolbchatiye i krugoviye diagrammi" corresponds to the method of card diagrams - "Column and circular diagrams". We will consider the process of creating thematic layers on the example of creating hydrological maps of our republic[10,11,12,13,14].

MapInfo allows you to separate point, line, and field objects by subject when creating a map in the "Separate Values" method. For this purpose, individual values are selected that have the appearance of the given field. The program selects the color corresponding to each value. If necessary, the color will be changed according to the user's preferences[15,16]. This method is used in creating vegetation, soil, land quality, slope exposition, political-administrative and other maps.

Range of values When using the Range attribute method, MapInfo groups values of objects that are close to each other and assigns the same colors, symbols, or lines to these groups[17,18,19,20]. The "range of values" method is also used in cases where the size of objects is not directly related to their numerical values.
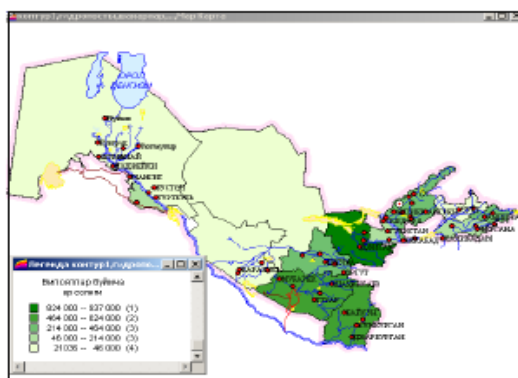

Figure 1. Land tax rates by regions.

RESULTS

The method is used to depict relative cartographic indicators of administrative or territorial economic units on maps, that is, to create maps with agrochemical content with different indicators of population density, economic or territorial units and other indicators.

"Surface" In the "Poverxnosto" method, MapInfo represents the thematic information of the map in the form of a rasterized surface with continuous color paints. Surface maps are used in most geographic information systems, where numerical data are considered to have a value and refer to a local point. For example, the surface method can be used to describe temperature

changes, snow cover thickness, or topographic surface relief[21,22,23,24,25]. The example below shows the topography of a plot represented by layered colored isolines. When creating conditional symbols of the surface type "Dimensional symbols" "Dimensional symbol" symbols of different sizes can be used to indicate different values.
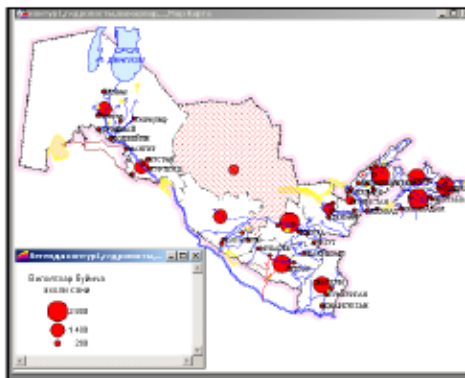

Figure-2. A card made using the "Dimensional Marks" method.

The following "Dimensional Symbols" conditional symbol layer of the "Dimensional Symbol" type shows the amount of construction of residential and public facilities in different administrative districts. The Dimensional Marks method can be used for graphic-type objects on a card. Such conditional symbols are very convenient for describing numerical data. When creating a card in the "Dimensional characters" method, you need to choose the appearance, color and size of the characters. To change the parameters of the symbols, click the button in the dialog "Setting dimensional symbols" "Nastroyka razmernix simvolov". The Symbol Shape dialog box will appear[26,27]. The standard type of "dimension marks" are red circles. When selecting character sizes, windows appear with data values and corresponding sizes. All sizes of characters can be used when creating a card, that is, from 0 to the maximum specified sizes. For small values to fit large characters, the character size should be maximized[27,28,29]. Even negative values can be used to represent objects as symbols. In addition, when comparing entries with positive values in a separate window, it is possible to select symbols that differ in appearance.

In this case, a new dialog "Character shape" "Stilo simbola" dialog will be opened, where you can choose the type of character, change its color and size. The icon size represents the negative value of the default shape in a blue circle. The method is used to create maps representing the relative number of the population in the city and the region, and the types of industrial enterprises in the city and the region[30,31].

"Density of points" When creating thematic cards in the "Plotnosto tochek" method, the concept of "weight" of a point is introduced, that is, the value of one point is determined. Points within the area are placed by MapInfo in an arbitrary, automatic manner[32,33,34].

"Column charts" The program allows you to display several variables on a thematic card using the "Bar chart" method. On the cards, a separate column chart is created with each faceted graphic object centered. Graphs of variable values expressed in different columns can be compared with each other. The above map shows the distribution of rents by region through the "Bar Charts" layer. The color of the column in the diagram indicates the different payments, and the height of the column indicates the size of the payment[35,36]. This method is used to

describe the total production of crops or individual plants in regional districts. The program has the ability to choose the color of each column in the charts, to create other charts on the card, to color the frame of each of them. In addition, it is possible to change the direction of the columns, that is, to choose whether they are displayed horizontally or vertically[1,3,5,7].

CONCLUSION

Today, the development of Geoinformation systems in the field of cadastre is influenced by scientific and technical achievements, on the one hand, and theoretical and practical research of geodesy and cartography, cadastral fields, on the other. We hope that theoretical and practical research in this field will begin in our country and will develop rapidly in the future.

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