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Title: **DEVELOPMENT OF A PROCEDURE FOR PASSING A HIGH NATURAL RISK AREA**

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Paper Authors: **Yarkulov Zokir Rakhmanovich, Rakhmatullaeva Kamola**



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DEVELOPMENT OF A PROCEDURE FOR PASSING A HIGH NATURAL RISK AREA

Yarkulov Zokir Rakhmanovich, Rakhmatullaeva Kamola
Teachers of the Department "Cadastre of buildings and structures" at

Abstract: User guide for developing procedures for counting high-risk areas and presentations for their development, brief information and description of the use of the interface, geographic information, thematic layers, working with labels of high-risk areas cadastral subsystems, map visualization and detailed instructions for finding information, industrial use, and the procedures and measures for health and safety and the environment, as well as the process of developing cost and labor estimates for these activities.

Keywords:

Introduction

The Republic of Uzbekistan is a system for geo-informatization of high-risk areas, which allows to collect a large amount of information and documents related to the activities carried out in the Central Database in the regions and in the country as a whole.

The Law of the Republic of Uzbekistan "On State Cadastres" of the State Cadastre of High-Risk Zones in accordance with the normative legal acts.

State cadastre of man-made zones is an integral part of the unified system of state cadastres and consists of a set of unified descriptions and images of high-risk natural zones (SCOMMZ), prepared on the basis of systematic observations, research and data collection, constantly updated and identified as needed. consists of a set of data on dangerous natural phenomena that occurred in

In order to ensure the registration of cadastral objects, their condition and assessment of the consequences of dangerous natural (geological, hydrometeorological) processes (events).

The following competent authorities are responsible for the conduct of the SCOMMZ :

On the zones of hazardous geological processes - by the State Geological Enterprise "Uzbekhydrogeologiya" of the State Geological Committee;

In the field of seismic hazards (NSS) - the only institution responsible for the preparation and implementation of cadastral information on NSS (seismological findings, their examination, periodic assessment, detailed research) is the Republic of Uzbekistan; in areas with a high risk of hydrometeorological events - by the center "Uzhydromet".

Regularly updated and supplemented information on the registration of cadastral objects, annually - on the occurrence of hazardous natural processes, their quantitative and qualitative characteristics, the consequences of the following hazardous natural processes (events):

The procedure for maintaining the state cadastre of high-risk zones is carried out in accordance with the requirements of the "Regulations on the procedure for maintaining the state cadastre of high-risk zones", approved by the Cabinet of Ministers of the Republic of Uzbekistan dated June 30, 2005 No 152.

On the basis of Resolutions of the Cabinet of Ministers of the Republic of Uzbekistan No. 255 of July 17, 1996 and №66 (supplemented) of February 16, 2005, the establishment and maintenance of the Unified System of State Cadastres (UNCS) was established in the Republic (Figure 1-2).

According to AWHGPO — Irregular occurrence of hazardous geological processes with a volume of more than 1.0 thousand cubic meters. The cadastral objects also take into account the area that is exposed to hazardous geological processes each year. Graphic accounting is carried out on topographic maps at scales of 1: 25000 and 1: 200000 using defined symbols;

According to AWHSR— earthquake zone and 25 sq. km. The area of the impact zone of different categories in the area of km. Areas that fall into the high category of seismic risk in the event of earthquakes outside the seismogenic zone, ie in the earthquake zone or in an area with a relatively low seismic risk, are also taken into account. To reflect seismic zones, cartographic materials are drawn on a scale of 1: 1000000 or 1: 500000 and 1: 200000 (for some areas) using the appropriate symbols.

The Unified System of State Cadastres is a multifaceted information system that combines all types of state and network cadastres and includes documented information on all real estate, indicating their geographical location, legal and economic status for each cadastral plot of land.

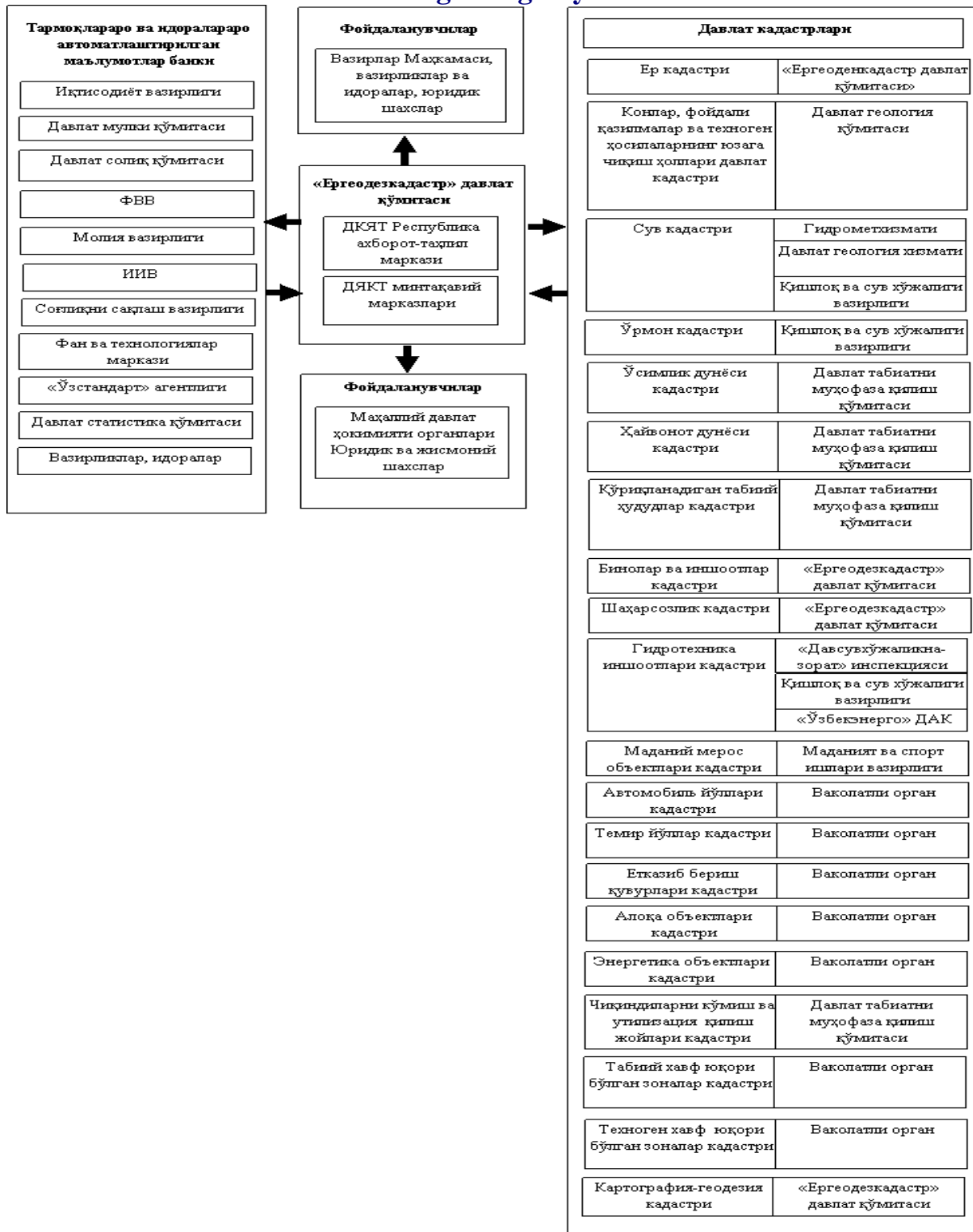
USOSC facilities include:

- natural resources (land, water, forests, mineral resources, flora and fauna, etc.);
- buildings and structures, transport and engineering communications;
- points of geodetic networks;
- Other elements necessary for the implementation of the functions of the

USOSC are the following basic principles of the USOSC:

- Full coverage of all territories of the Republic of Uzbekistan by each type of cadastral objects;
- use a single system of spatial coordinates;
- Unity of the methodology of cadastral information;
- reliability and transparency of cadastral information;

The scheme of maintaining a single system of state cadastral



Figure

Organization of a unified system of state cadastres

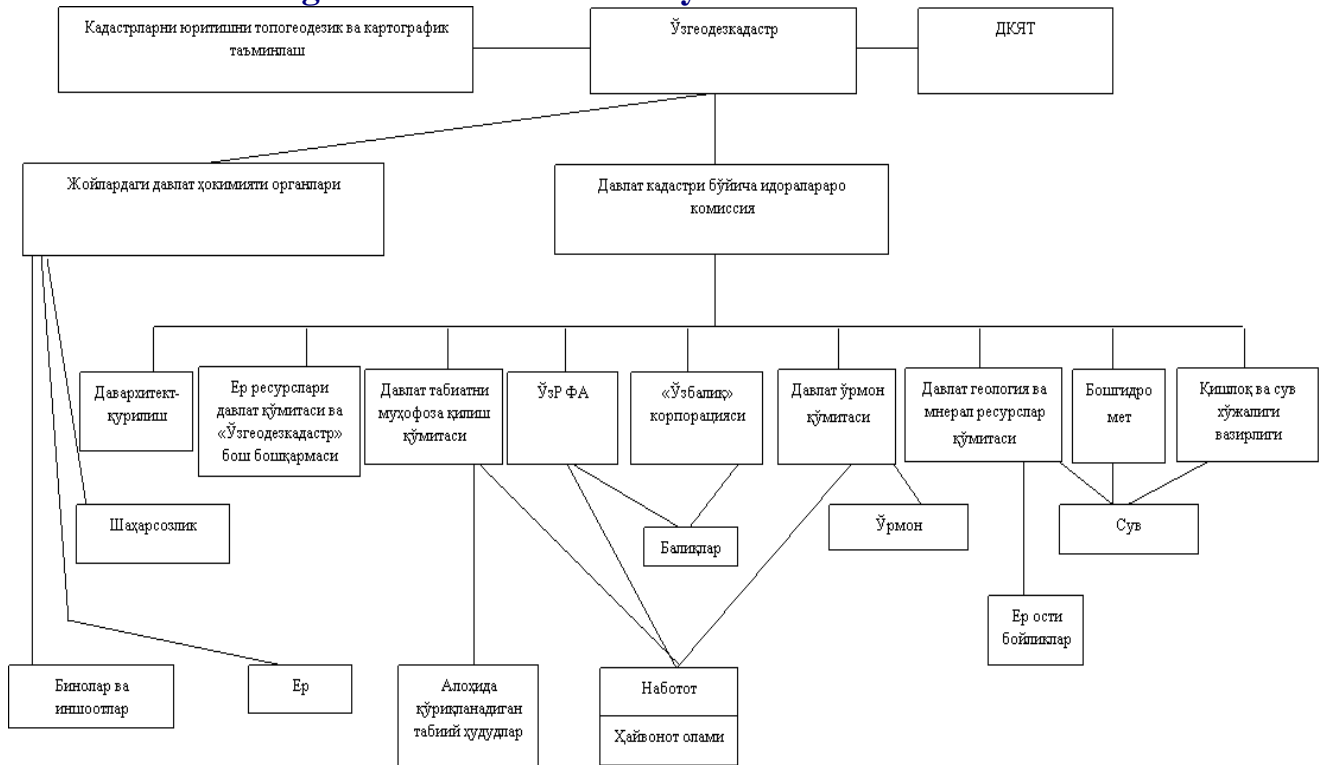
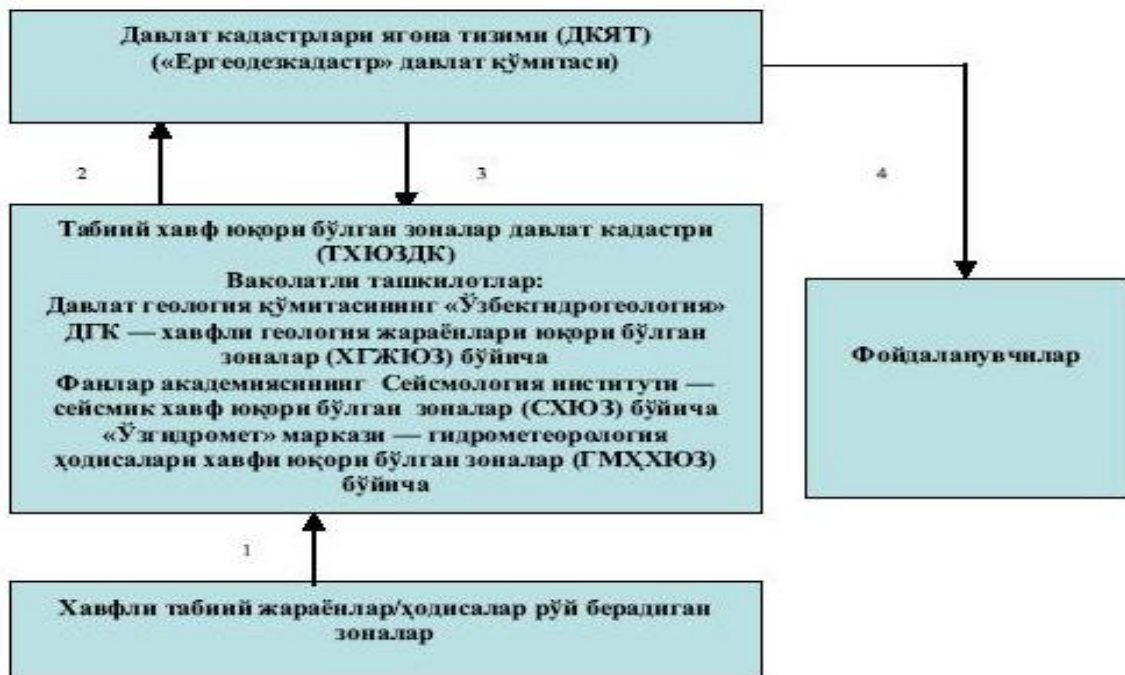


Figure 2

The Constitution of the Republic of Uzbekistan and the following laws, resolutions and normative documents are the primary ones in the activities of the territorial cadastre services for the creation and maintenance of the State Registration Service:

Scheme of maintaining the state cadastre of high-risk areas

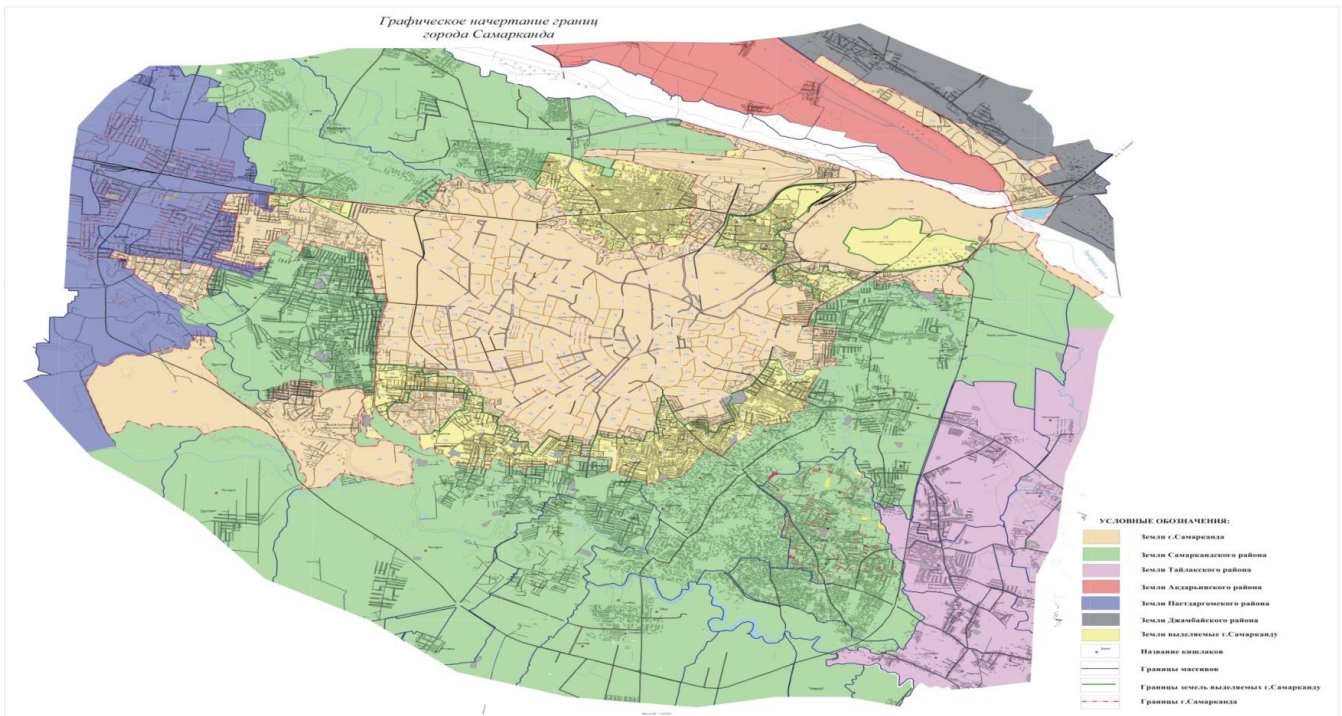


* Стрелкалар билан кадастр ахборотлари ҳаракати йўналиши белгиланган.

1. The services of territorial units and authorized organizations collect Cadastral information on Land Registry.
2. Competent organizations-State Geological Society "Uzbekgogeology" DGK, Seismological Institute of the Academy of Sciences, Center "Uzgidromet" summarizes Cadastral information on TKHYUZ and provides it to the database of state agency "Ergeodeskadastr".
3. Authorized organizations-the state geology Institute "Uzbekgogeology", the Seismology Institute of the Academy of Sciences, the Center "Uzgidromet" on request can obtain Cadastral information from the state cadastre database "Ergeodezkadastr".
4. From the DSA, users can obtain Cadastral information on the DSA from the DSA database of the state agency "Ergeodeskadastr" on request.

residential buildings were distributed to 139 companies. The total number of real estate objects in the city of Samarkand for 2 016 years 1 January is 110869, of which 102866 residential objects, 8003 non-residential objects. Taking into account the rapid growth of the population in our country, a separate legal status and monitoring of the use of urban land are established. The use of urban land is mainly aimed at solving construction issues on the basis of a strictly defined plan. It means that the land of the city acts as a foundation, Foundation, place, space for the placement of urban construction facilities.

The city of Samarkand is the center of Samarkand region, borders with Samarkand from the North and partly with Akdarya , partly with Samarkand from the East and partly with Samarkand , partly with Samarkand from the south and West , partly with Lowdargom from the North – West Side (Figure 1), the total land area is 12128 hectares, of which the number of lands in akholi The city of Samarkand consists mainly of the former Siyab, Bagishamol vatemiral districts, Khishrav, chemists and Farkhad fortresses , the residence of Rafi Khamroev aholi, which was given from the Akdarya district, as well as the regions of the regions added From the Samarkand district. The total residential area in the city is 4.5 million square meters. close to m^2 , there are about 38 thousand buildings, according to the total account 744 low – rise and multi-storey



The legal status and monitoring of urban lands are defined in the Land Code of the Republic of Uzbekistan (articles 59-67). According to him, all land within the administrative borders of the city enters the land of the city. The land border of the city will consist not only of buildings and lands occupied by various devices, but also of land that is not occupied by buildings that serve the economy and the population of the city. The boundaries of the land of the city are changing. It is possible to add to it new lands for the needs of new residential buildings, transport, utilities.

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According to Article 61 of the Land Code of the Republic of Uzbekistan, ownership of municipal lands in accordance with the approved projects of planning and construction, use and lease is carried out in accordance with the decision of the mayor of the city of Uzbekistan dated June 30, 2005 y 1998 № 152 of the Cabinet of Ministers of the Republic of Uzbekistan "on approval of the regulations on the procedure for maintaining certain state cadastres" 1-annex "on the procedure for maintaining the state cadastre of zones with high, tasks are assigned to create an automated geographic information system, drawing up land cadastral maps and plans, collecting spatial coordinated information on land resources,

working on them, reflecting and distributing them.

The report will be submitted to the Cabinet of Ministers after its completion. The report of the regional cadastre service is submitted to the Uzavtoyol concern, where it is reviewed and registered. The composite volume of the road cadastre consists of documents, materials and information on cadastral photography, technical inventory and certification, special inspections and surveys, quality and value assessment of the cadastral object, necessary for the formation, registration and subsequent state registration of the right to the cadastral object .

The map of the state cadastre of the zones with high natural risk is a graphic drawing document reflecting the location of cadastral objects, their boundaries, boundaries of protection, assessment, quantitative and qualitative characteristics, it will consist of information on the geographic location, legal status, quantity and qualitative characteristics and assessment of cadastral objects.

The report on the status of objects of the state cadastre of zones with high natural risk is drawn up in accordance with the established procedure for each type of State Cadastre and includes information on the status, assessment of cadastre objects by separate regions and the entire Republic of Uzbekistan. Provision of information to state cadets. Information on the State Highway cadastre is provided to the state authorities free of charge, to other and physical persons in the prescribed manner.

Zones with high natural risk are responsible in accordance with the established procedure for persons guilty of violations of normative acts on the state cadastre.

In order to carry out the above work, in accordance with the agreement with the state agency "Ergeodezkadastr" is carried out by the state-owned company "Uzavtoyul", providing technical parameters and cadastral information, as well as by the "Department of land formation and cadastral registry" (Figure 4) in the territorial Cadastral service.

The full working process of this department can be expressed through the following 7 - th picture.

According to the Figure 4, the work "cadastral survey" of highways and "calculation of the coordinates and area of the border punks of the land plot" are part of the type of topographic and geodetic works.

To carry out the "cadastral survey" of zones with high natural risk, work should be carried out in the following order::

1. the materials of topographic and geodetic works on the preparation of the cadastral survey of the zones with a high natural risk will consist of the following references:

2. Study of existing archive materials belonging to this land plot for the implementation of topographic and geodetic works (legal documents, topographic materials, etc.)

3. The catalog of coordinates of existing Geodetic base offices in the area where this land plot is located, abrisi is studied and determined its place on the spot. If there is no geodesic base in the existing area, a special geodesic base is formed for this area by connecting to the starting point.

4. Depending on the methods of performing cadastral survey, Geodetic instruments are selected, appropriate inspection and testing work is carried out.

5. On the site, work is carried out to connect rekognosirovka and geodetic base offices.

6. Execution of cadastral C'yomka (menzula C'yomka, taxometric C'yomka, corrective work).

7. Drawing a cadastral image (drawing manually in the traditional way, based on computer programs - "Autoca", "Panorama", "CredoDAT", "GeoniCS", "AutoCAD", etc.).

8. Filling Vedomosti of the calculation of the coordinates and area of the boundary points of the land plot (traditional computational work: in graphical, mechanical, analytical methods or on the basis of computer programs).

9. The following financial documents on the performance of cadastral survey will be formalized:

- The contract for performance of topographic and geodetic works is concluded and executed by "Customer" and "Executor";
- On the basis of the instruction "On the organization of land plots, topographic and geodetic, cadastral surveys" No. 62-1, developed by the Committee "Uzdavergeodezkadastr" dated 12.06.2009, an estimate of work performed and the act of delivery and acceptance of work performed. "Customer" and "Executor";

10. The collection of cadastral documents of the land plot is prepared and submitted to the state register.

11. **Zones with high natural risk** are included in the turn-by-turn map of the territory of the state cadastre (in the traditional way or on a digital map on the basis of computer programs) ;

12. The data of this land plot will be entered into the Dgyat database;

13. One copy of the original documents will be transferred to the archive of the organization, the second copy to the "customer" in the established order;

14. In accordance with the established procedure, reports are issued to the relevant authorities (to state tax authorities and on request).

In the preparation of the cadastral system of the state of zones with high natural risk, the following topographic and geodetic materials are first prepared [21:

- zones with high natural risk to create a topographic basis for the performance of the cadastre of the state. In order to obtain the topographic plan of the teritorium, triangulation, polygonometry are hung and plan-taking offices are built.[9,10]

Analytical, if the plan is built in the method of obtaining shakhabsky triangulation, shakhabsky is called theodolite path if the polygonometry is built in the method.

Height planing stations are built in technical and geodetic nivelirlash methods. Planned and height plan acquisition offices can be built together or separately. The density of the points of obtaining the Plan depends on the mass of obtaining the plan. Plan-taking points are constructed in conjunction with state Geodetic base points and local points in order to obtain 1:500 scale plan with 4 units in each 1km² Location, 1:2000 scale plan with 16 units corresponding to the plan. The number of punks in obtaining a 1: 500 scale plan depends on the location conditions and is determined at the time of rekognosirovka.

Photographing for cadastre is carried out in aerophotogeodetic and methods of execution on the ground, that is, horizontal or Vertical s'yomka work on the ground. Bunda s'yomka works are connected to geodesic Punks, which are known coordinate and Absolut otmetks, and are carried out with a large scale (1:500,1:1000, 1:2000, and 1: 5000) topographic Cadastral plans are drawn up. [12,15,22]

Cadastral plans are drawn up for the registration of their area, dimensions, underground communications, legal, ownership and rights in the process of using buildings and structures.

Obtaining a large-scale plan is carried out with the help of stereotopic, taxometric, spatial, theodolite methods of obtaining a plan and nivelirlash the area, depending on the size of the area.

The cadastral plan under construction and the accuracy, detail and completeness of its construction are interpreted in detail and with a complete description of the release.

When we say the accuracy of the plan, we understand the plan of the point being described and the error of the height in the middle square. The middle quadratic error of the case of a point is determined by the formula:[1,2]

$$m_{\text{с}} = \sqrt{m_x^2 + m_y^2} \quad (1)$$

Here, m_x and m_y are the mean square error of measuring the abscissa and ordinate of a point in the plan.

If we accept that $m_x \approx m_y = m_k$, then will be $m_{\text{с}} = m_k \sqrt{2}$.

According to experimental results, this value is 0.3-0.4 mm. The larger the scale of the plan, the higher its accuracy.

The detail of the plan is characterized by the degree of similarity of the images depicted in it to the contours and elements of the place.

The completeness of a plan refers to its level of density with detail and relief elements, characterized by the smallest dimensions and distances of the depicted object.

The area of this land plot is determined on the basis of the developed cadastral plan. The assessment of the accuracy of measurements in the detectable area is represented by the

following formula, proposed by Professor V.

$$m_p = m_t \sqrt{P \sqrt{\frac{1+K^2}{2K}}} \quad (1)$$

Maslov [12]:

There m_p is the mean square position of measuring the length of the sides;

R is the measured area value;

K- the ratio of the length of the field to the width.

If $m_t=0,3$ MM is $P=2500\text{MM}^2$, formula will be

$$\frac{m_p}{P} = \frac{0.3}{50} = \frac{1}{167} = 0,6\%$$

works:

1.To examine the existing topographic plans and geodetic materials of the area where this land plot is located.

It is necessary to take the existing topographic plans in the archive of the organization or in the cartographic fund and have a thesis about this land plot, if there is a topographic plan of this land plot, to plan the corrective work (making appropriate changes to the topographic plan). In this work, 1:2000 topographic plan of the city of Samarkand was taken as the basis.

2. Collection of information about existing geodesic base offices located in this area.

If there is a topographic plan of the territory, then it is necessary to take in the established order the directory of coordinates of the Geodetic base (local) branches and the Abris, which are located there. To do this, the regional Cadastral department will be contacted.

3.The procedures for the development and formalization of topographic and geodetic assignments for the creation of the cadastral

plan of this land plot were fully described in the 8-16 images.

4. To create a cadastral plan of this land-wide area in one system, connect the landfill on the ground to the geodesic base units.

If there is a need to create Geodetic (local) base (trigonometric or polygonometric cathology and abrisi) punches in this area, these works are carried out by geodetic enterprises with special competence and the relevant information (coordinates) in accordance with the established procedure is presented to the "Executive" Enterprise. To draw up a cadastral plan in the system (in the local system or in the system of coordinates of 42 years), the plan is connected to Polygon - trigonometric or polygonometric punches, which are made at the site of reception, that is, the coordinates of one of the Polygon corner ends are calculated according to the coordinates of the base punk, and the direction Then the direction of the other sides in the same direction is found.

Depending on the location of the puncture in relation to the polygon and the demand for work, The Polygon is connected to the point in different ways. For example, if the given Polygon is closed, the coordinate atasi of one end of it and the direction of one side are determined by the base punches; if open, the coordinates of the ends of the head and the last angle, as well as the angle of the head and last sides are determined by the direction. In addition to field surveying, computational work also occupies a great place in this fastening work. There are a lot of works, such as solving the problem of a triangle with the help of the sine theorem, solving both correct and inverse Geodetic issues, calculating the angle of direction of the side. Here we will consider the following cases of tying.

Polygon AUS... a point coordinate of R and a point coordinate of R and a point coordinate of R and a V direction Aav must be determined when a tip of R of R appears in Q punk from R as close to the Punkt and r can be set in punk instrument (Figure5).

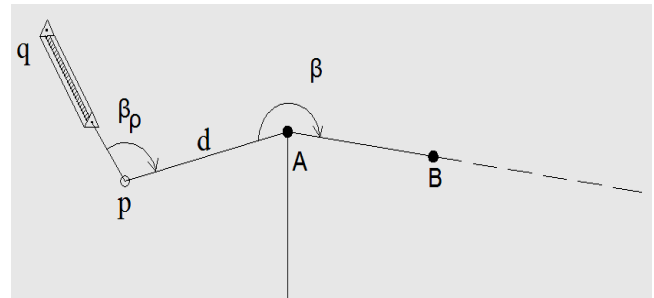


Figure 5

The solution of the problem is carried out in the following order.

1. Standing at points R and A, the angles β_P , β_A and the length d towards AP are measured:

2. Applying the inverse geodetic problem on the coordinates p and q X_r, Y_p and X_q, Y_q , the direction X_r was determined by α_{PA} :

$$\begin{aligned} \operatorname{tg} \alpha_{pq} &= \frac{\Delta y}{\Delta x} = \frac{y_q - y_p}{x_q - x_p} = \frac{12,555 - 749,13}{4,605 - 351,50} = \\ &= \frac{-736,58}{-346,90} = 129^{\circ}22' \end{aligned}$$

3. The direction of the α_{PA} towards the α_{PA} was found:

$$\begin{aligned} \alpha_{pa} &= \alpha_{pq} + \beta_p = 129^{\circ}22' + \\ &+ 152^{\circ}13' = 157^{\circ}09' \end{aligned}$$

4. α_{PA} , calculated with α_{AB} :

$$\begin{aligned} \alpha_{AB} &= \alpha_{PA} + \beta_A - 180^{\circ} = 157^{\circ}09' + \\ &+ 247^{\circ}23' - 180^{\circ} = 89^{\circ}46' \end{aligned}$$

5. Gains for the PA side were calculated:

$$\begin{aligned} \Delta X_{pa} &= d \cdot \cos \alpha_{PA} = \\ &= 235.60 \cdot \cos 157^{\circ}09' = -217,11 \end{aligned}$$

$$\Delta Y_{pa} = d \cdot \sin \alpha_{PA} = 235.60 \cdot \sin 157^{\circ}09' = 91.48$$

List of used literature

5. Then the correct geodetic problem was applied and the coordinate of point A was calculated:

$$X_A = X_p + \Delta X_{PA} = 351.50 + (-217.11) = 134.89$$

$$Y_A = Y_p + \Delta Y_{PA} = 749.13 + 91.48 = 840.61$$

The coordinates of the remaining points V, S and D of the Polygon according to the coordinates of the identified points xa or polygon are calculated in the established order.

On the basis of Geodetic base punches created on this land plot, work on the implementation of cadastral survey was initiated.

Determination of Geodetic base punches in place. Since the base punches on the hyomka branches are not kept long, they are fastened with wooden columns with a length of 30-40 cm, diameter 4-6 CM; on top of which the nail stumbles, the cap of the nail is considered to be the center.

The soil on top of the Punkt centers is pulled up (arid)

Methods of performing cadastral survey. Depending on the size of the area of the cadastral plan, as well as the accuracy of drawing up the plan, the full description of the details and relief, one of the methods of obtaining a plan is chosen - theodolite (horizontal) plan, stereotopographic, taxometric, spatial plan.

Taking into account the existing Geodetic instruments in Cadastral services, now Cadastral plans are being implemented by methods of obtaining a theodolite, taxometric and spatial plan.

1. Law of the Republic of Uzbekistan "On State Land Cadastre". August 28, 1998.

2. Law of the Republic of Uzbekistan "On State Land Cadastres". December 15, 2000.

3. Law of the Republic of Uzbekistan "On Geodesy and Cartography". April 25, 1997.

4. Land Code of the Republic of Uzbekistan. New laws of the Republic of Uzbekistan. Volume 19, / T.: Adolat, 1998. - 120 p.

5. Law of the Republic of Uzbekistan "On State Land Cadastre". New laws of the Republic of Uzbekistan. Volume 19, / T.: Adolat, 1998. 25 p.

6. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated January 31, 1996 No 44 "On the organization of the Main Department of Geodesy, Cartography and State Cadastre under the Cabinet of Ministers of the Republic of Uzbekistan".

7. Resolutions of the Cabinet of Ministers of the Republic of Uzbekistan "On approval of the Regulations on the organization and maintenance of the Unified State Cadastre System of the Republic of Uzbekistan" No. 255 of July 17, 1996 and No. 66 of February 16, 2005.

8. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan "On approval of the Regulations on the procedure for maintaining certain state cadastres" dated June 30, 2005 No 152

9. Annex 1 to the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan "On approval of the Regulations on the procedure for maintaining certain state cadastres" dated June 30, 2005 No. 152 "Regulations on the procedure for maintaining the state cadastre of railways"

10. "Collection of Legislation of the Republic of Uzbekistan", 2005, No. 25-26,



Article 181.

12. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated December 31, 1998 No 543 "On maintaining the state land cadastre in the Republic of Uzbekistan".

13. Resolution of the Cabinet of Ministers of the Republic of Uzbekistan "On maintaining the state cadastre of real estate in the Republic of Uzbekistan" dated June 27, 1997 No 278.