

## USING GAT WHEN DRAWING UP LAND DRAWING CARDS

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**Abstract.** *The article presents data on the use of GAT in the construction of land formation cards using agricultural irrigated land productivity, restoration, assessment and management modern technologies, including space images taken by satellites in Earth orbit, geoengineering systems technologies and an automated database.*

**Keywords:** *cadastre, land areas, geographic information systems, geoinformation cartography, theme cards, cadastre cards, inter-farm land development projects, in-farm land development projects, modern computer techniques.*

Increasing, restoring, evaluating and managing the productivity of irrigated land in agriculture is being implemented using modern technologies, including space shots taken by Earth-orbiting satellites, geoinformation systems technologies, and an automated database. After the independence of the Republic, a number of reforms were carried out in order to more fully satisfy the demand of the population for food.

Especially in this regard, the changes taking place in the agrarian sphere, creating new forms of economic activity, dramatically increasing the volume of land development. The growth of the information supply of land development work that came during this period led to the need to improve it qualitatively. Uzbekistan on the introduction of modern technologies in the field of land development

Many measures have been taken by the Kashkadarya Regional Department of the state Cadastral chamber under the cadastral Agency of the Republic of Uzbekistan, the Kashviler project Department of the State Scientific and Design Institute "UZDAVERLOYIHA" within the Ministry of Agriculture of the Republic of Uzbekistan. In particular, in the activities of effective land use, assessment of land resources, prevention of negative processes and elimination of consequences, creation of a unified system of State cadasters, Information Communication and geoengineering technologies were implemented in the field.

Geographic Information Systems (GIS) in the composition of Earth Sciences and on the basis of Informational Technologies, Geographic Information Systems (GAT, later the word GIS is used in the generally accepted phrase) are created – it is an automated hardware-software complex that provides topographic, geodesic, collection of Earth Resources and other Cartographic Information about objects and phenomena, processing them, storage in Now in cartography there is a need to create new themed cards (land drawing cards, resource cards, ecological cards, Cadastral cards and other cards). Now informatics (data set) is gaining great success in solving problems that are difficult to solve in all aspects of our society, including at present, when disciplines are connected through interaction with each other. As a result, within the sciences, new disciplines are also entering the field of cartography. The application of Informatics in the sciences of land formation gave rise to a special direction – the field of geoengineering.

The geohistory was described by prof. A.M. Berlyant defines: it is a scientific field that studies the structure, dependence, dynamics (the unity of change with time and space) of a geotist by computer modeling. This field is used not only in geoism, but also in technology and

production. GAT (Geographic Information System) is an automated hardware system, a scientific field that assembles, processes, preserves, describes and distributes space-by-Time coordinated Geoinformation.

"Geoinformational cartography is a branch of cartography. the automatic compilation and use of Cards, a model of geoism, is the use of it by studying it on the basis of GAT technology and geographical (geological, ecological, socio-economic, etc.) knowledge", describes prof. A. M. Berlyant (1).

Currently, in modern cartography, various special automatic equipment is used when drawing up cards and preparing them for printing. These are cars making cartographic images, electronic cordinatographs, automatic color selection equipment, etc. In all GIS , methods of data collection, processing, storage in memory , updating, analysis, and execution of these processes through technical means have been noticed in a special program that can process data on a computer or an adequate image feature. Thus, GIS is a perfectly developed system that relies on a vast meaningful database of natural networks collected by various methods.

The GIS-technology of erecting cards was intended not only to create a layer of themed cards, but also to edit them. To explain the layers simply, they are in the form of a set of white transparent sheets, in each of which the objects of the geographical base (land areas, linear elements, hydrography, settlements, administrative boundaries, roads, etc.) are described separately, in addition, elements of the special content of the card can also be expressed.

Such transparent sheets, located on top of each other, form a cartographic image. GAT serves to find a scientific and practical solution to analyze, evaluate, predict, and inventoried society in territorial organization and environmental management. The basis of GAT is an automatic cartographic system, the main source of data and a cartographic image of regions. Through GAT, cards, aero-space shots, statistical, Cadastral, Hydrometeorological and expeditionary data can be collected and used wherever needed. International organizations (UN, YUNEP), public institutions, ministries, cartographic, Geological, land Cadastral organizations, statistical organizations, private firms, scientific research institutes and universities are involved in the organization of the gat. Gat is used in production, large-scale finance, calculation of monetary costs. In addition, Geoinformation infrastructures in different areas are being established and connected with telecommunication networks.

As a result of this, the production of agricultural cards has risen to new levels: after the exchange of manual labor with a computer, the creation time of the cards has decreased, the quality of the issued district agricultural cards has improved. Work is currently underway using the geoengineering system (GAT). The Department of electronic cartography and design has moved on to more modern styles of card creation and has mastered geoinformation systems in cartography. Indeed, the land developer service, working with old traditional methods and tools, has now been able to quickly carry out these works using GIS (geographic information systems) Technologies. GIS is a system of geographic information, with the help of which the objects around us are described in the form of maps, analyzed by many factors and parameters, and on the basis of this information, prognoses are prepared for different areas. GIS technologies can be applied effectively on various fronts, in particular in land development, land cadastre, oil and gas industry, engineering communications, ecology, agriculture and several other industries.

The need to speed up design work requires, on the one hand, a sharp reduction in the time from the time of obtaining land developer plan-map, land cadastre norm and other data, their

analysis and design, to allocating land in places and issuing land development documents confirming ownership or use rights on land, on the other hand, increases the demand for the quality of Land development is considered to be the design of land development, the main purpose of which is to organize and maintain the effective use of land in land use, land grant and reclaim, sale and acquisition, which is achieved by performing the following land development:

- calculations of the project received in the district land development drawings;
- work on internal land development projects in inter-farm and farm;
- preparation of working projects to be worked on for the implementation of land development activities;
- copywriting control over the displacement of projects and their implementation.

The open portal "Land Information system" YAT "was created and put into practice by the state research and Design Institute "UZDAVERLOYIHA" within the Ministry of Agriculture of the Republic of Uzbekistan. In the ArcGIS program, electronic digital maps are being created when deciphering space images using modern technical means, analyzing the fields of which are calculated and given an irreplaceable number and forming the Earth.

In conclusion, these technologies provide the opportunity to reduce the service life of the project, improve the quality of projects, ease the work of the developers. In addition, with the help of modern computer techniques, we can freely use not only the qualitative solution of technical and economic issues, but also the economic-mathematical methods and models in the forecasting, planning and design of activities for the protection of land resources and the organization of their effective use.

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