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RAQAMLI GEODEZIK XARITALARNI YARATISH TEXNOLOGIYASI

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Abstract: This article discusses the technology of creating digital geodetic maps, their importance in the fields of geodesy and cartography, and the processes of collecting, processing and visualizing spatial data using modern Geographic Information Systems. The study also analyzes geodetic measurement methods, GPS technologies and the capabilities of GIS software. The results show that digital geodetic maps play an important role in territorial management, land resource accounting and the development of cadastral systems.

Keywords: Digital map, geodesy, GIS, geographic information systems, GPS technology, spatial data, cartography.

The fields of geodesy and cartography are directly linked to the development of modern science and technology, as they allow for the collection, processing, and visualization of information about the Earth's surface and territories. Today, **digital geodetic maps** play a crucial role in land management, urban planning, cadastral systems, and infrastructure development. Unlike traditional paper maps, digital maps enable the storage, updating, and analysis of large volumes of spatial data. The process of creating digital geodetic maps relies on several technologies and methods. Geodetic measurements, GPS and GNSS systems, electronic total stations, and other modern instruments are used to collect data. Subsequently, this information is processed using **GIS (Geographic Information Systems)** software, spatial data is organized, and represented in map form. These technologies allow maps to include not only spatial features but also territorial, statistical, and legal information. The main goal of creating digital geodetic maps is to **accurately, reliably, and efficiently represent land parcels, territories, and objects**. At the same time, these maps serve as a key tool for the digitization of the cadastral system, effective land resource management, and territorial planning. Digital maps created with modern GIS systems provide visualization of data through various layers (points, lines, polygons) and make analysis easier. Furthermore, ensuring the accuracy and quality of data is crucial when creating digital geodetic maps. This enables geodesy specialists, cadastral officers, and urban

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planners to **make reliable decisions**. Therefore, the technology of creating digital geodetic maps is considered one of the main scientific and practical research topics in modern geodesy.

Conclusion

In conclusion, the technology of creating digital geodetic maps plays a significant role in the fields of geodesy and cartography. The use of modern GPS and GIS technologies allows for the accurate collection, processing, and visualization of spatial data. Digital maps are crucial for effective land resource management, improving the cadastral system, and supporting territorial planning and development.

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