

Application of Integrated GIS at Natural Resources Study

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Natural resources study comprising geological mapping, prognosis and prospecting of mineral resources, study of environmental changes under manmade impact and natural factors, prediction of changes trends are conducted in Russia.

Integrated GIS including among others remotely sensed data is effective tool for these works. Developed on GIS basis geoinformation techniques allow to use considerable volumes of heterogeneous information as vector, raster and attributive data and provide capabilities for input, correction, storage, processing, analysis, modeling and put out of results.

Remotely sensed data is used as raster layers, which objectively displays the state of Earth's surface at survey moment and provides basis for system approach to study of environment because of image is spatial multicomponent reduced model of territory surface.

Capabilities of remotely sensed data interpretation are extended by using of information containing on vector layers of thematic geological and topographic maps, ground truth data and knowledge of regularities inherent in natural formations.

Attributive data includes statistical and inquiry information.

Above mentioned three types of information form of Data Bank, which is a basis of IGIS and permanently supplement by new materials obtained in work process. The important factor of effective usage of Data Bank is development of such organization structure of the data, which provides its simple input, at saving of accuracy and information content, fast and effective processing of spatial data and put out of results in form of electronic maps. In the same time initial information, interpretation and analysis of results may be multiple used.