

MONITORING OF TOWN-PLANNING ACTIVITY AS THE PART OF THE GENERAL PLAN FOR DEVELOPMENT OF TERRITORY OF THE MOSCOW REGION (MOSKOVSKAY OBLAST)

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As a result of development of the General plan for development of the territory of the Moscow Region, the main law of territory planning - "The Scheme of territorial planning of the Moscow Region - substantive provisions of town-planning development" has been approved by the government of the Moscow Region. The government of the Moscow-Region had necessities for the operative control of a condition of territory of the Moscow Region and monitoring of directions of its development which would not contradict the approved scheme. There is a special action "Monitoring of a condition of territory of the Moscow Region, possible directions of its development and restrictions of its use" in the structure of the regional target program " Development of the General plan for development of the Moscow Region for the period till 2020 ", for these purposes

The action has such goals:

- The creation of techniques and technologies for monitoring changes of a condition of territory of the Moscow Region, essentially influencing steady spatial development of the Moscow Region.
- Monitoring of occurring changes with the purpose of duly revealing tendencies in directions of development of territory of the Moscow Region. Operative definition of negative tendencies and changes of the factors limiting steady development of the Moscow Region.

We have offered a method of operative reception of the information on a current condition of territory using of the remote sensing data (RS) received by orbital survey. We have tried a number of RS data from various space sensors. As the result of preparatory inspection, We have selected as the basis data for monitoring data with space vehicles IRS 1C/1D. After that, the complete coverage of the Moscow Region has been created by orbital survey of 2004-2007. The RS data for Moscow Region were supplied, collected and operated to full seamless coverage by ScanEx Company. Also, a number of techniques of the comparative analysis of the spatial data of different years and seasons of survey have been developed. All techniques were based on the modern computer technologies of recognition of multi-spectral images.

As the result of the first year of work, we had got a specialized raster-vector map of a current condition status of spatial development of territory of the Moscow Region. We have developed the technique in which all territory of area on the base of the vector data has been divided into initial classes of a condition status of territories - woods, fields, settlements (divided on some types on a degree of a urbanization), roads, water objects, etc. Such division, allows to reveal changes of a class or type only within the limits of in advance outlined territories. Such technique allows simplifying process of the comparative analysis. In the offered technique, each subsequent image on a vector mask is compared to the previous condition of district. Then the revealed changes are cleared of noise. After that, collected changes are act in processing for revealing a new class in which the considered territory has passed.

At a stage of development of a technique, we have managed to reach ability of revealing of changes the transition not only from one class to another, but, we have got the ability to obtain changes from one class of the urbanized territories to another and in very limited area.

So, for example, in territory of the city of Bronnitsy we have detected the occurrence of new object. It is a new capital building which occupy a picture area only 4 on 4 pixels (approximately 24 on 24 meters), instead of earlier existed rural low-rise building.

Key words: monitoring, spatial development, Moscow Region (Moscow Oblast), Russia, IRS, PAN, LISS