THE USE OF REMOTE SENSING DATA IN THE UPDATING OF THE LAND CADASTRAL DATA

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UE "Design Institute Belhyprozem" has five subsidiaries located in the biggest regional cities. It carries out land planning works all over the Republic of Belarus. Among the works performed by "Belhyprozem" are:

- The preparation of the documents which prove the rights of the land ownership;
- The development of the Schemes of land-utilization for the analysis and planning of area use;
- The preparation of projects of the farm boundary adjustment;
- Soil investigation and the creation of soil maps;
- The creation and exploitation of Land Information Systems (LIS);
- And others.

LIS contain information concerning modern condition and use of land resources of the Republic of Belarus; it consists of special and attributive data of land-utilization, land-cadastral and topographic contents. The special information of LIS is presented in the following layers:

- Administrative and area units boundaries;
- Land plots boundaries;
- kinds of lands (cartographic basis);
- communications;
- Land use limitations;
- Reclamation state of lands;
- Soils.

Land Information Systems are created on the basis of aerial photography materials for the district areas with the accuracy of the topographic maps on a scale of 1:10 000 and for the territories of big settlements on a scale of 1:2000.

For all the tasks mentioned above it is necessary to have the actual information available, i.e., the cyclic updating of the information; and for the number of tasks the monitoring of the changes in some particular territories are needed.

The updating of the layer of land plots are carried out in accordance with the materials of land-utilization documents (land plots granting) and the data of the Unified State list-register of the immovable and bargains related to it (USRI).

For the updating of the layers of types of lands, reclamation state of lands, and soils the materials of land-utilization, the data of aerial and space photography are used.

Since the Land Information Systems are created with the accuracy not rougher than of topographic maps on a scale of 1:10 000, it is possible to use space photos with the geometric resolution not lower than 2.5 meters.

During the year of 2007 along with the conventional works the State UE "Belhyprozem" performed the works on:

- The updating of LIS data, using the materials of space photography;
- The development of the Scheme of the land-utilization of Soligorsk district;
- Monitoring of the soil condition for the territory of the testing area, established in 2001.

The updating of LIS data was performed quasi for the territory of Soligorsk and Dzerzhinsk districts. In the course of updating of Dzerzhinsk district the satellite QuickBird data were used (the scene which was won during the previous conference in 2007). For the

updating of the part of Soligorsk district as well as foe the surveying the reclamation state of lands and soils, the satellite Ikonos data were used.

In Soligorsk district there is the State Unitary Enterprise "Production Association Belaruskaliy", one of the world's biggest potash manure producer and supplier, that is why this region belongs to problem areas of the Republic of Belarus. The development of the potash manure field influences the environment of Soligorsk district and its technogenesis affect is represented as follows;

- The subsidence of the ground surface above the framed space in mine fields and pits, displacement of undermined objects, underflooding of the ground surface with waters, and waterlogging;
- Air pollution with dust and gas emissions of technological and power plants;
- Alienation of vast areas of agricultural lands for the waste storage.

The maximum subsidence of elevation in some particular plots of mine fields come to 4 meters, which leads to underflooding and waterlogging of lands. Proactive reclamation works are being carried out in order to protect land plots from underflooding and waterlogging in the areas of technogenetic subsidence.

The penetration of technogenetic substances into the local landscapes by air and the import of acid salts to the lower plots determine salinization.

The testing area (its key plot) for the monitoring of the state of soils is located on the territory which has a dynamic soil covering, i.e. drained peatbog lowland soils with different peat power and degrade peat mineral and mineral residual peat soils. This key land plot describes a most typical soil combination of the tested agricultural soil area and contains agricultural lands which are typical for this particular combination. For the period of observations of 6 years of the soil covering in the key land plot the following tendencies were marked: the packing of peat on the borders of the land plot; decrease of the peat power; and increase of degrade soil areas in peat fields.

In 2008 the creation of Schemes and development of the projects of the land utilization in Myadel district are planned.