RACURS

Growth in Photogrammetry in Russia

Racurs is privately owned company established from scratch in Moscow in 1993 without any start-up capital. The four founders, with backgrounds in the Russian defence industry and the Russian Academy of Science, wanted to transfer their knowledge and great experience in developing complex software systems for 3D visualisation, CAD and image processing to commercial software production.

The first commercial product from Racurs was the photogrammetric software PHOTOMOD, the first license of which was sold in Russia in 1995. Since then we have continually improved the system to adapt to the requirements and wishes of our customers. It has thus evolved from a set of tools for single stereo-pair processing to a complete digital photogrammetric system capable of utilising a wide range of input imagery to produce all kinds of photogrammetric data such as DTMs, orthomosaics and vector maps. As an initially 'monoproduct' company, Racurs has expanded its business significantly and now acts on the market as a software developer, and producer and provider of remote-sensing data and services.

Company Business
Our mission is to provide the worldwide geospatial commun-ity with advanced and cost-effective digital photogrammetry solutions and services for creation from remotely sensed data of a wide range of output products. We are currently developing our business in the directions of development of digital photogrammetric systems, providing photogrammetric services and distribution of SPOT images. Although we have diversified our initial product, PHOTOMOD remains our flagship product, providing the biggest share of financial and human resources. In its current state our software family comprises a wide range of modules allowing the extraction of geometrically accurate spatial information from almost any commercially available imagery obtained by film or digital camera, high-resolution satellite scanner and synthetic aperture radar. At the same time we offer special modules, StereoLink and StereoVectOr, to help our users to work seamlessly with MicroStation and Map2005, both popular Russian GIS and desktop cartography systems.

Satellite Imagery
Since 2000 many commercial photo-grammetric projects for Russian and foreign companies have been completed. Over ten thousand images have been processed to produce DTMs, ortho-photos and 3D vector maps. The most significant projects have been power-line survey for a Russian electric power company and a project for IGN (French Mapping Agency) on topographic database creation (BD Topo). In the power-lines project more than six thousand aerial images have been processed in co-operation with Russian users. The IGN project has involved processing a total of 2,426 aerial images in 22 blocks, creating a 3D-vector database cov-ering an area of about 22,130km2. In 2005 the company became a distributor for SPOT imagery in Russia. This was a quite natural step for us because some of our software users need satellite data for their mapping projects. Our interest in SPOT data results also from the ability of SPOT satellites to survey big areas within a reasonable time, very important for Russia because of the size of its territory. This ability was confirmed in 2005 when one of our clients from a state mapping enterprise ordered SPOT5 2.5-metre resolution scenes for 1:25,000-scale maps to update an area of more than 200,000km2. The acquisition was successfully completed within about three months. We try to maintain technical contact with leading data suppliers to learn more about sensor geometry. Our contacts with Space Imaging (CO, USA) have resulted in PHOTOMOD certification for IKONAS imagery processing.

Business Philosophy
We consider relations with customers and partners as a joint enterprise within which each party should enjoy its own benefits. We help our clients to implement their projects, and they support our business by purchasing our products and services and guide the development of our software by revealing their wishes and requirements. We do not limit our post-sale service to technical support alone, but also provide consulting services on optimal use of our products for particular projects. Racurs presently has 32 full-time staff members working in departments devoted to software development, technical support, photogrammetric production, and sales and marketing. We additionally hire fifteen to twenty part-time production operators who assist in carrying out big projects.

International Focus
Two of our business directions (software sales and photogrammetric service) have an international focus. Our software is offered with the help of an international network of eighteen dealers spread around the world: Europe, Asia, the Middle East, Africa and Brazil. Since 1995, about seven hundred PHOTOMOD licenses for over 3,500 photogrammetric workplaces have been sold in 45 countries, half in Russia and former USSR countries. Almost all sales in Russia are direct, while abroad the great majority of sales go through dealers. Our clients use our software for a wide range of applications such as topographic and cadastral mapping, large-scale mapping for design and construction purposes, and education. In Russia our main clients are large, state mapping enterprises and cadastral survey companies.

Market Trends
The geoinformatics market has been rapidly developing as a result of new types of data and techniques. We believe that some main

market trends influence the development of photogrammetric systems. Firstly, an increase in satellite data supply; spatial resolution enhancement and wide use as initial data in mapping and GIS projects will require that software developers support newly born data. Secondly, direct georeferencing (GPS/IMU) will significantly reduce the number of GCP required, or may even make these superfluous. And thirdly, laser-scanning systems could cause some traditionally photogrammetric tasks to be solved using Lidar technology. This tendency should be considered in photogrammetric technique so as to offer more effective combined solutions.

We expect a substantial growth in photogrammetry in Russia over coming years. The need for mapping and updating maps of large territories will grow significantly as fuel needs boost the energy industry. In addition, a unified land cadastre will be created. We challenge the world market as a top-level supplier of photogrammetric software and services in data processing. This is no day-dream: Russia's developers, its programmers and mathematicians, have not yet reached their full potential, and co-operation with Russian partner companies is possible for completing major international projects.