VISIONMAP
Digital mapping systems

CASE STUDY

Baltaeroservis Captures Vast Russian Forest & Urban Areas

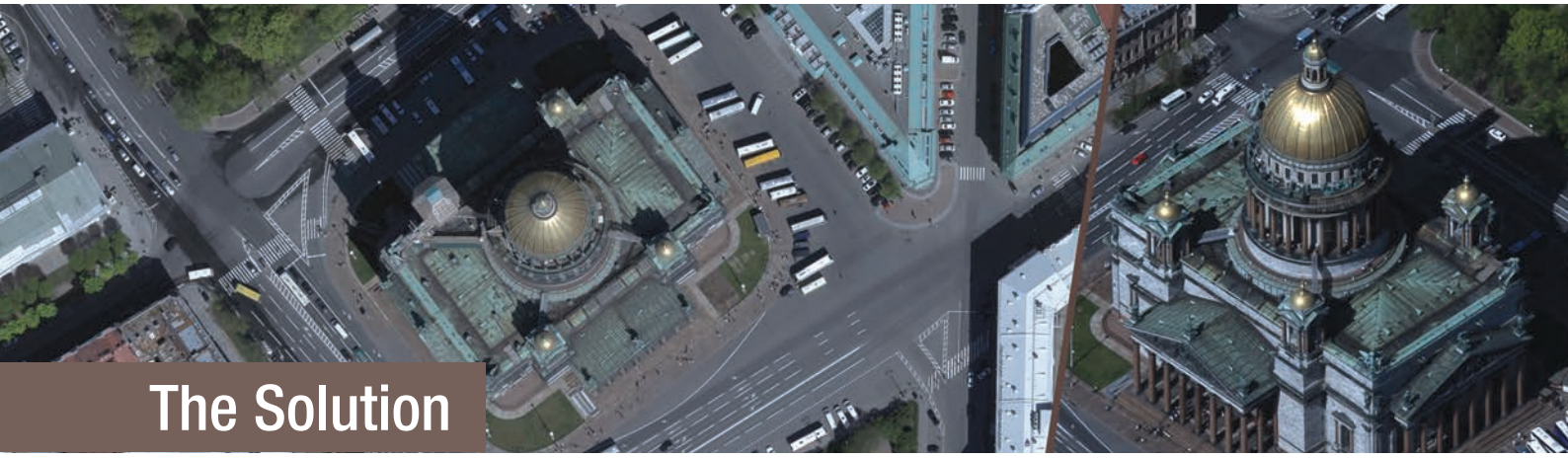
For more than 15 years, Baltaeroservis has been providing a full range of services in aerial photography, orthophoto production, and topographic mapping across Russia. Baltaeroservis delivers local and state governments with high quality final products for general mapping, forestry and environmental mapping. Over the years, the company has used various analog and digital aerial survey cameras.

The Challenge

Russia contains over 8 million km^2 of forest. In 2013, the Russian government decided to take inventory of this entire forest area, and perform forestry taxation. Such a vast and ambitious project demanded innovative new technologies for obtaining information.

Additionally, local governments of large cities such as Moscow and St. Petersburg were interested in having updated visual and mapping information about the cities' infrastructure, as well as the possibility to create 3D models of the cities.

Baltaeroservis was commissioned to help undertake both of these projects - which came with several challenges. Big cities like Moscow and St. Petersburg restrict flight at low altitudes, and good flying weather is scarce year-round. As such, the solution chosen for these projects would have to be able to fly at high altitudes while meeting resolution requirements, and be able to capture the area quickly and efficiently.



The Solution

Baltaeroservis chose the A3 Edge Digital Mapping System to take on the projects. According to Baltaeroservis, “We chose A3 Edge because of its high productivity – both in capture and processing.” The camera’s focal length enabled Baltaeroservis to fly at high altitudes while providing very high ground resolution, and the quick capture technology made the most out of each good weather day. Furthermore, the camera’s simultaneous collection of vertical and oblique imagery makes it ideal for 3D city modeling.

In the forestry project, A3 Edge collected CIR imagery of a 33,490 km^2 area at 14 cm GSD, meeting the requirements of a 1:10,000 mapping scale. Flight over this vast area was completed in less than 48 hours. Automatic processing of the imagery, including 4-band orthophoto production, was completed by the A3 LightSpeed in 52 days.

Baltoaeroservies noted several useful capabilities of the A3 LightSpeed Processing Suite. “The most time-consuming task of arranging the tie points has been eliminated, the automatic creation of cut lines saves us processing time, and the aerial triangulation is of very high accuracy”. LightSpeed offers many useful features such as automatic brightness adjustment, contrast, and haze removal.

For the urban mapping project, a crisscross flight over St. Petersburg (2007 km^2 area) at 10 cm GSD took 11 hours. The captured images were used for orthophoto production, and will be used to create a 3D model of St. Petersburg. Processing was done automatically in 15 days. All of the mapping products meet the requirements of a 1:2,000 mapping scale.

Customer's Response

“After completing these two projects, we can say that we are very pleased with the performance of the A3 Edge system,” said Alexander Magarshak, CTO of Baltaeroservis. “We have only recently acquired the system and it has already performed a significant amount of work for us”.

“For comparison,” said Alexander, “in 2011 we were contracted to survey the exact same urban area. The camera used at the time was PhaseOne, and processing was performed by Talca 4.0. It took five operators six months to do the job. This time, with A3 Edge, the entire project took 15 days”.

Furthermore, Alexander added, “VisionMap’s support team has been extremely useful to us, and we would like to express special thanks for their assistance. We look forward to working with them to continue optimizing our work with the system.”

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VisionMap Ltd. is a leading provider of digital automatic aerial survey and mapping systems. Its flagship A3 solution, comprised of a large format camera and automatic processing system, is known for its capability to capture and process areas 2-3 times larger than other available systems in significantly less time, while reducing operational costs.

The system supports extremely large scale projects and automatically produces Aerial Triangulations, DSM and Orthophoto mosaic as well as Stereo Models and Geo-referenced Oblique images. VisionMap systems are successfully deployed around the world.

For more information, visit www.visionmap.com