Partner in Airborne Survey

ASTEC GmbH, Germany, is a private company specialising in airborne data collection and derived products. In late 2006 ASTEC GmbH took over business, equipment and staff from Terra Digital GmbH to continue and enlarge the already established business.<P>

ASTEC employs about twenty professionals in sales, marketing, data capture and processing. Our know-how includes the operation of airborne survey, digital photogrammetry, airborne Lidar, and GIS, and our main products are digital orthoimagery (standard and true) and Lidar Digital Elevation Models (DEM). Our vision is to support clients in finding solutions to meet their needs, and we try hard to keep in close contact with our customers, not only to establish long-term relationships, but also to improve the quality of products and develop new solutions. Since founding we have enjoyed steady increase in turnover; in 2008 this is approaching 3.5 million Euro, 75% growth compared to 2007. Projects have been carried out in Europe, the Middle East and Africa.

In-house
Using our own ALS50 Lidar system and ADS40 large-format digital camera mounted on our own aircraft or on rented platforms, Lidar DEMs are captured and orthophotos recorded. Analogue films are scanned using a DSW600 digital-scanning workstation. The purchase of the two airborne sensors was accompanied by a significant expansion in hardware and software facilities. Today GPS processing, point-cloud calculation and DTM generation of Lidar data is carried out on six workstations, while eight are available for orthophoto generation. Aerial imagery is processed to make orthophotos along two lines: using tools such as GPRO, LPS, Orima, Socetset and Orthovista, and employing Infoterra's Pixelfactory, mainly used for production of true-orthophotos. Both lines are backed by a 16-knot multi-processor cluster system.

Market
Our customers are mainly public-sector organisations such as municipalities and state mapping agencies. The demand for standard orthophotos has for years been constant, and the switch from analogue to digital cameras seems to be going more quickly than expected. Customers increasingly demand raw digital-image data accompanied by simultaneously collected Lidar DEM. The rationale is cost saving. Lidar DEMs make it possible for customers themselves to generate orthophotos. The demand for true orthophotos is rising; we have captured more than 7,000 km² over the last two years. Both true and standard orthophotos, each with its own pros and cons, can be cheaply produced from just one survey if flight parameters have been properly set. The market for Lidar DEMs is growing continually. As in other western European countries, many parts of Germany have been captured or are on the way; a few "Bundesländer" have already reached or will soon enter the updatingstage. Austria is on the way to being completely covered, and southern and eastern European countries will follow. At present, countrywide acquisition is done at 1 point/m², sometimes even 4 points/m². The obvious trend towards high-resolution requires upgrading of hardware and software on the customer side, and this is especially true of orthophotos, where pixels need to be of 10cm or better.

Lifecycle
The demand for geo-data collected by digital airborne sensor is also growing. Digitisation allows automation and thus swift production of high-quality geodata. But quality control is still mainly a human skill, and so time-consuming. A new challenge is the shortening lifecycle of equipment. Rapid innovation reduces the operational life-span of, for example a digital camera to three to five years, while an analogue camera lasts ten. Competition requires respect for these cycles, resulting in high investment over short time-spans, while on the other hand prices are permanently falling. We try to cope with these challenges by intensifying use of equipment, for example by acquiring projects at distant locations. Unfavourable weather may not be present everywhere simultaneously, so in this way we can reduce stand-by times. For the same reason we are seeking partners in Europe and abroad. Joint running of projects enables sharing knowledge of the particularities of the national market and reinforces technical execution. We want to strengthen our network and support partners in opening up markets over coming years. In the orthophoto market, in particular, the near future will see more frequent capture of large areas, perhaps 10,000 km² and bigger. Data collection by more than one camera would help to complete such projects faster, even when periods of favourable weather are short, which often occurs. It would benefit us to collaborate with sympathetic partners possessing their own equipment.