

Modern Techniques for Airborne Data Acquisition

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The aircraft based data acquisition techniques have changed in the past years more than in decades before. The film based large format camera is partially replaced by digital cameras and airborne laser scanners (ALTM).

The BSF Luftbild GmbH is a company offering the whole variety of techniques in projects all over Europe. We fly with analogue and digital cameras, with single sensors or with sensor combinations to provide our clients with the data to satisfy their data requirements.

The BSF Luftbild has wide experiences with digital frame cameras, with line cameras and with their combination with ALTM data. The BSF Luftbild operates its own Vexcel Ultracam D and several complete systems of Zeiss LMK cameras (9 cm, 15 cm and 30 cm lenses). Beside this we did projects in the past years with the Zeiss/Intergraph DMC and the line camera HRSC-A, owned and developed by the DLR, Berlin-Adlershof.

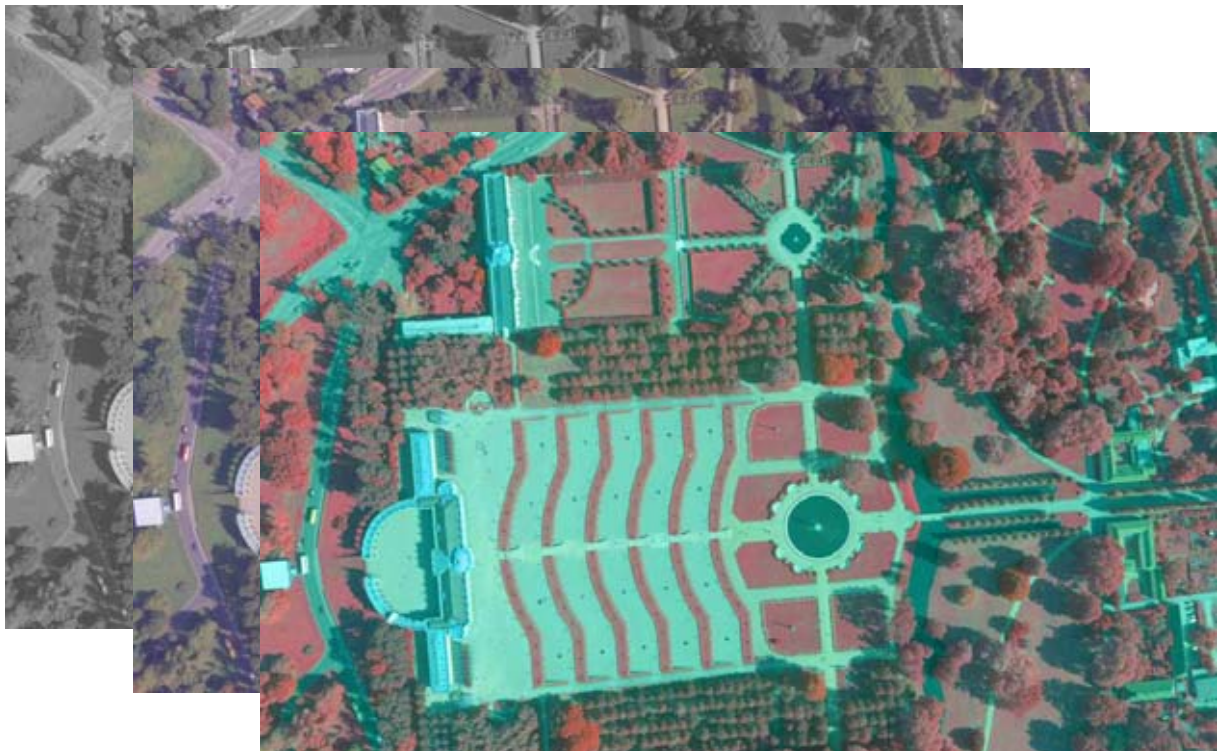


Fig. 1: Three products of the Vexcel Ultracam D: From back to top: panchromatic image, RGB and Colour Infrared Image (false colours).

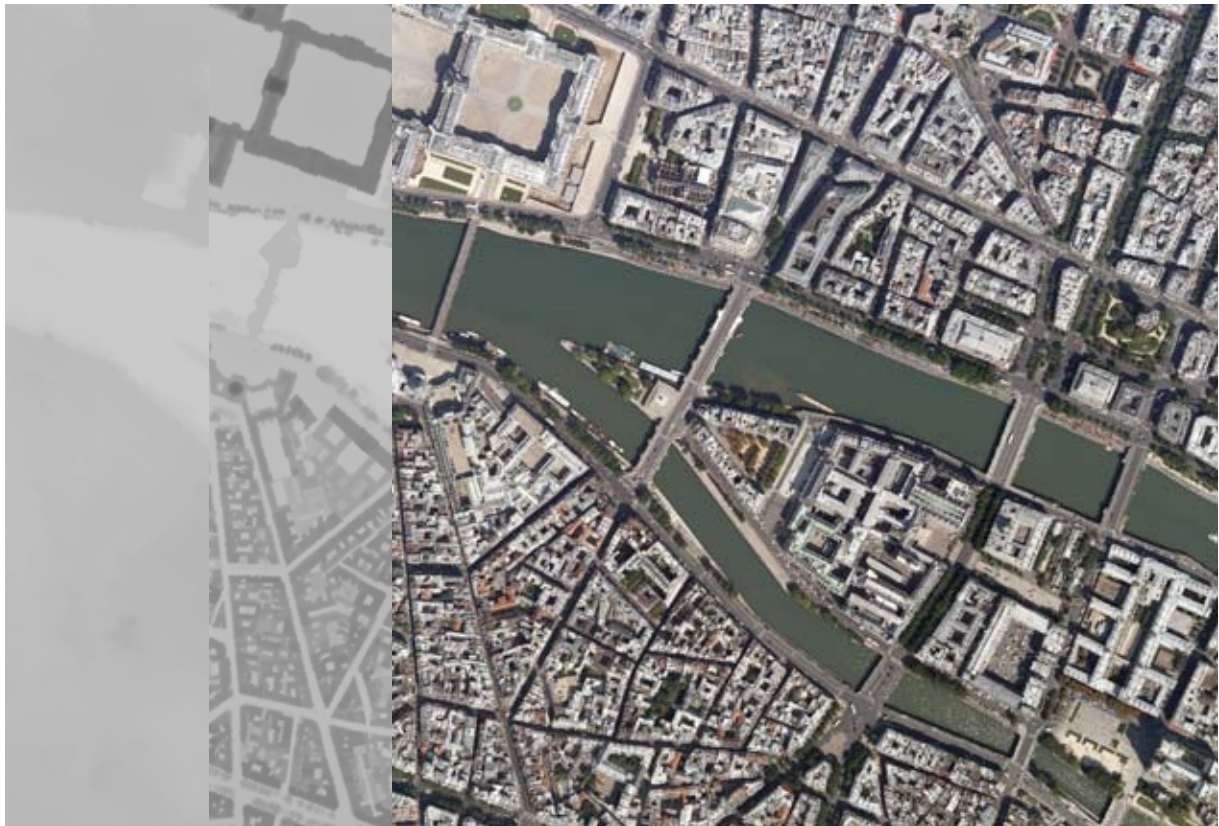


Fig. 2: Three products of a combination flight with digital camera and airborne laser scanner: From back to top: Digital Terrain Model (DTM), Digital Surface Model (DSM) and Digital Ortho Photo (DOP).

BSF Luftbild GmbH has performed an combination flight with digital frame camera and laserscanner of the whole Paris metropolitan area (6800 km²). We delivered digital terrain models (DTM) and digital surface models (DSM) with a resolution of 1 m (central area, 1200 km²) or 2 m (metropolitan area, 5600 km²), digital Orthophotos in RGB with 12,5 cm resolution.



Fig. 3 (top): One of the aircraft of the BSF Luftbild GmbH: The Cessna 404 with two camera openings to operate double sensors.



Fig. 4 (right): Installation of digital camera Vexcel Ultracam D and Laserscanner Optech ALTM 3100 in our aircraft Cessna 404.

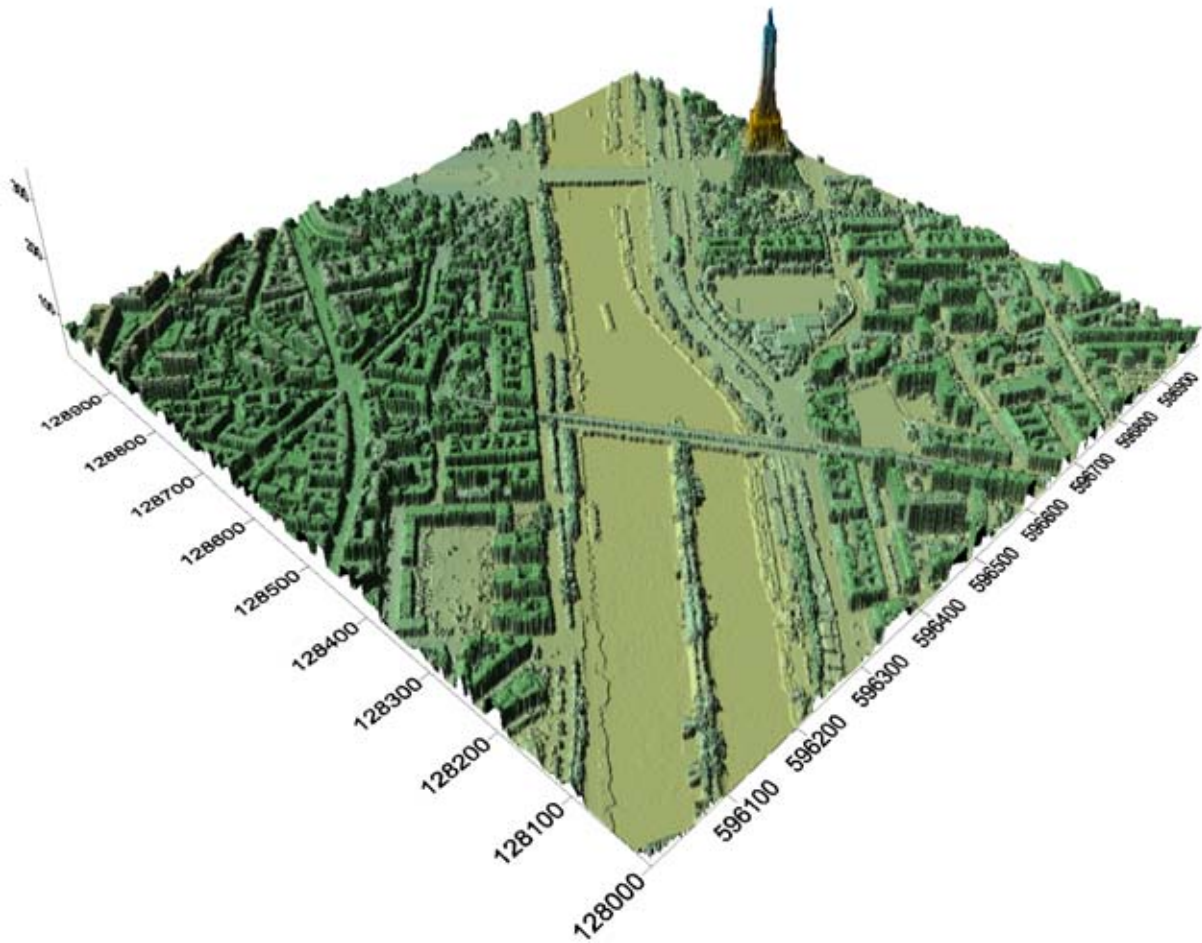


Fig. 5: Digital Surface Model of a tile in Paris derived from Lidar data

Beside this topographic data we deliver tailor-made data for several special applications. These data are used for the management of energy and traffic infrastructure, for planning and administration purposes or for navigation systems. The BSF Luftbild offers the production chain from mission planning, photogrammetric flight, digital ortho photo production, digital and analogue stereo restitution to the final GIS product.

As a member of the Swissphoto Group and in our cooperation network we can do even the final data analysis according to the special requirements of our clients. We are an ISO-certified company with a lot of international experience. In the past two years we did projects in the UK, France, Norway, Finland, Portugal, Austria, Switzerland and Poland. We are still looking for new cooperation partners all over Europe.



Fig. 6: Power supply installation. The image has been rectified based on direct sensor orientation with DGPS and inertial navigation system (INS).