worldwide aerial mapping

» Integration solutions for LSA / UL aircraft
» Professional surveying sensors
» Unrivaled operational economy

ultralight mapping systems
Remote sensing in a cost efficient way
AeroMap is a worldwide provider of integrated mapping systems and remote sensing data.
We are specialized on the integration of compact, but powerful sensors in LSA / ultralight aircraft that offer professional, cost efficient mapping. This development is driven by the integration of the latest sensor models, an ultra-low-weight sensor stabilization, highly automated software solutions and the use of composite technology.

A unique light aircraft mapping system
We integrate professional surveying systems into light aircraft:
- Up to date LSA / ultralight aircraft with glass cockpit, long range and high speed range provide a safe and stable mapping platform that comes at low operation costs.

Expertise for aircraft manufacturers and mapping companies
We offer our expertise on system integration for various applications - from camera systems to turnkey multi-sensor-platforms. We consult aircraft manufacturers on required adaptions and help aerial mapping companies provide a tailored solution for their demands.

Laserscanning and photogrammetry in one flight
The integrated AeroMap mapping system can provide both, aerial imagery and laserscanner data within one flight. Provides another step towards higher efficiency.

Economy in acquisition and operation
Due to the lean AeroMap concept, initial and operational costs are very competitive (typical 2-3 times less compared to standard systems).

New markets
The AeroMap system opens up new markets for small to medium-sized mapping projects, where standard technology would be too expensive.

LSA / ultralight aircraft
LSA / ultralight type aircraft are the ideal platform for an integrated mapping system. In combination with Aero Map’s compact, yet powerful sensor developments, this is the future of aerial surveying for small to medium-sized projects.
- In cooperation with other partners, AeroMap developed a certified cargo pod solution.
- The system can be adapted to operate on various types of aircraft.
- Systems can also be fit into the fuselage, depending on sensor outfit.
**Photogrammetry**
Lab-calibrated professional aerial cameras for high resolution imagery in RGB and near infrared (NIR) from mid to large format or oblique – 3 axes stabilized. The high speed of the aircraft results in coverage rates of over 400 km² per hour. A forward motion compensation (FMC) avoids motion blur.

**Laserscanning**
Full wave sensors with high data rates – 3 axes stabilized. The low speed of the aircraft can provide point densities of over 25 pts/m², which can otherwise only be achieved by helicopters. The stabilization guarantees unmatched data quality due to a regular scan pattern.

**Stabilization**
The gimbal system stabilizes all sensors: cameras and laserscanner. It is aligned by the flight management system according to the planned flight lines and only weighs 6 kg.
- Pitch/roll: +/- 10°
- Heading: +/- 25°
- Accuracy: < 0.5°
- Payload stabilized up to 25 kg

**Flight management system**
The tablet-based flight management system comprises pilot guidance, sensor triggering and gimbal control. Easy kml-based flight mission import.

**IMU/GPS**
The synchronized GPS/IMU units provide real time position and attitude solutions for the flight management system and the stabilization. After post processing, high precision trajectory data can be used for the georeferencing of airborne laser scanner data or aerial imagery. The dual antenna system helps to get stable heading information even on long, straight mapping lines.

**Software solutions**
AeroMap offers image fusion software for RGB / NIR aerial imagery, including distortion removal and matching-based sub-pixel layer stacking.

**Processing software**
- GPS/IMU: Inertial Explorer
- LiDAR georeferencing: RIEGL
- Raw image processing: Phase One
- Image processing: QGIS, Global Mapper

**System Calibration**
- Camera calibration
- Lever arm and boresight calibration
- Sensor synchronization
Who we are

AeroMap is a system integrator for sensor hardware and worldwide provider of high-resolution remote sensing data, located in the heart of Europe. Based on long-term experience we developed a sophisticated remote sensing platform, which fits into an ultralight aircraft. This is the new standard for low-cost, yet high quality mapping.

AeroMap was awarded for their project “Development of a Fully Stabilized Multi-sensor-Platform Based on a Light Aircraft – Photogrammetry and Laser-scanning Cost Efficient” with a nomination for the Austrian State Engineering Award.

Our strengths

» Customer-oriented mapping solutions
» Consultance, planning and manufacture of:
 » Light aircraft mapping systems
 » Highly economic and flexible
 » Ideal for small to medium-sized project areas