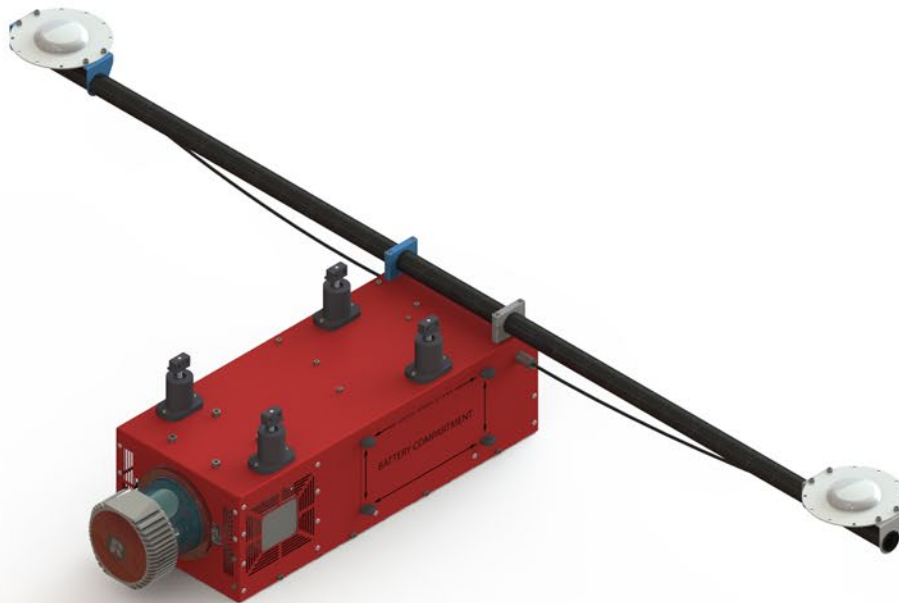




ALMI Technology

Airborne Laser Scanning with the Scout B1-100 UAV Helicopter



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Our Technology



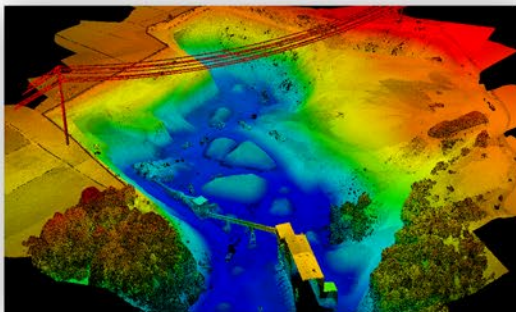
ALMI Technology - Airborne Laser Scanning and Monitoring Integration

The ALMI technology has been developed by Aeroscout GmbH for professional 3D aerial laser scanning based on an UAV system. It allows continuously monitored, accuracy controlled, vibration-isolated, and time-synchronized 3D laser scanning from the UAV system.



The ALMI technology has been developed, tested, and successfully demonstrated on the Aeroscout Scout B1-100 UAV helicopter. In addition, the ALMI technology can also be applied on other UAV systems.

The UAV payload section includes the laser scanner tightly coupled with an high-grade dual-GPS antenna INS/GPS navigation system as well as a GPS reference station.

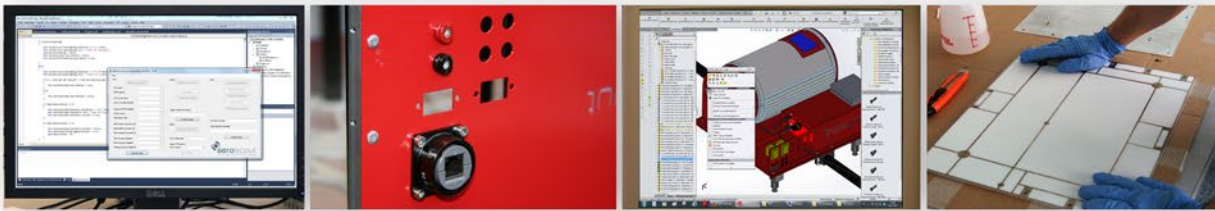


Aeroscout started developing the ALMI technology as a contributor to the EU research project "BACS" at ETH Zurich (2006-2010). In the last years, the knowledge was transferred into hard- and software for the industrial requirements of airborne laser scanning.

The ALMI technology will allow you to perform successful 3D aerial laser scanning based on the Scout B1-100 UAV helicopter.

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Our Technology



Facts of the ALMI Technology

- The ALMI user interface allows you to communicate with all payload components and to configure them as required before the flight.
- After time synchronization the 3D laser data processing can either be started/stopped manually or automatically based on the mission parameters and planning.
- During data recording the amount of recorded data is shown on the ground control station (GCS) as well as the current accuracy performance and the data communication status.
- The ALMI technology offers various kinds of data interfaces such as Ethernet LAN, WLAN, USB, RS232, RS485, etc. The remote download of recorded 3D laser data and navigation data allows immediate performance control and feedback on the field.
- The hardware integration of the ALMI payload includes a complete vibration isolation produced by the engine and rotors of the UAV system.

Features of the ALMI Technology

The ALMI technology

- ... can be combined with all state-of-the-art [RIEGL](#) laser scanners.
- ... has been optimized for the OXTS INS/GPS navigation unit.
- ... allows to integrate any GPS reference station providing differential corrections.
- ... allows online performance and accuracy display.
- ... provides online communication status information.
- ... provides online feedback of the recorded data.
- ... allows remote access on the recorded data.
- ... user interface allows to integrate various types of data links, including standard modem communication as well as broadband data links.

Our UAV Product



The Scout B1-100 UAV helicopter

has been recognized as one of the leading autonomous helicopter systems (UAV) for various applications and has shown its outstanding capabilities in multiple countries and many projects such as high-accuracy 3D aerial laser mapping⁽¹⁾, autonomous 3D aerial magnetic scanning⁽²⁾, and aerial inspection.

The Scout B1-100 UAV system consists of an industrial-grade autonomously flying helicopter with a customer payload⁽³⁾ up to 18 kg and a flight endurance⁽⁴⁾ up to 90 min.



The complete flight mission can be pre-programmed from lift-off, hovering, cruising to landing with high positioning accuracy.

Various safety features such as autonomous homing and automatic landing in case of link-loss as well as redundant backup links are part of the standard UAV system.



(1) as documented in the EU research project at ETH Zurich 2006-2010, www.bacs.ethz.ch

(2) as shown in joint projects with Mobile Geophysical Technologies (MGT), www.mgt-geo.com

(3) Total payload = equipment + electronics + fuel = 30kg.

(4) The flight endurance has been tested at 500m AMSL in hover flight out of ground effect