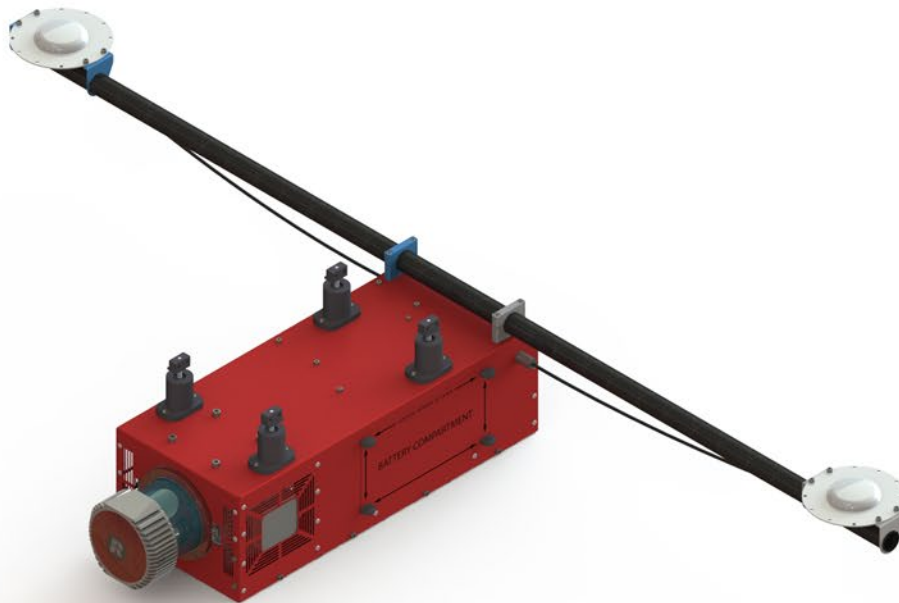




ALMI Technology

## Airborne Laser Scanning with the Scout B1-100 UAV Helicopter



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## Our Technology



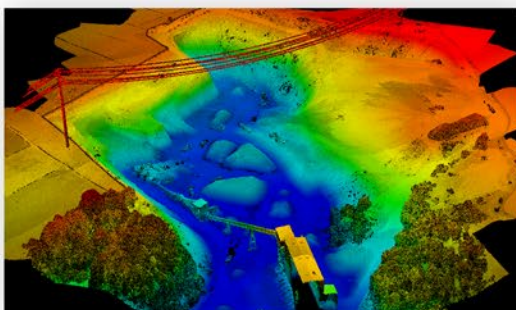
### ALMI Technology - Airborne Laser Scanning and Monitoring Integration

The ALMI technology has been developed by Aeroscout GmbH for professional 3D airborne 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.

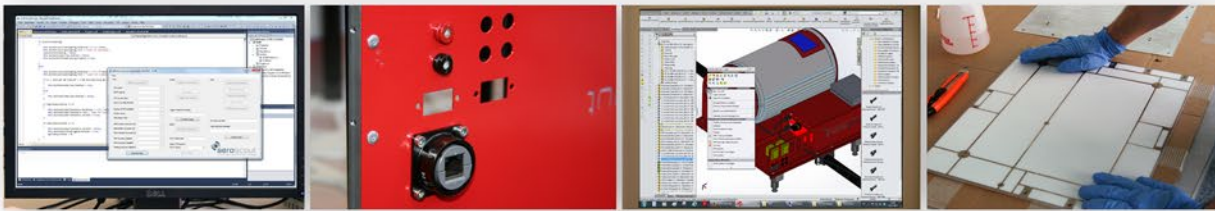


Aeroscout started developing the ALMI technology as a contributor to the EU research project "BACS" at ETH Zurich (2006-2010). In the last years, the knowledge was transferred into hard- and software for the industrial requirements of airborne laser scanning.

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

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## Our Technology



### Facts of the ALMI Technology

- The ground control station can remotely communicate with all payload components to configure them before the flight.
- The scanner can be started and stopped remotely from the ground control station during the mission flight.
- Status information of the laser scanner and the INS/GPS is sent to the ground control station to monitor the ongoing data acquisition during the flight.
- The hardware integration of the payload includes an advanced vibration damping to protect the sensitive parts from vibration caused by the engine and the 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 OXTS INS/GPS navigation units.
- ... provides online status information of the scanner and the INS/GPS system.
- ... allows remote access on the recorded data.
- ... allows to send differential corrections to the payload during the flight.
- ... can be upgraded to store the differential GPS correction data on ground.
- ... can be upgraded with a digital photo camera for point cloud photo overlay.

## 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<sup>(1)</sup>, autonomous 3D aerial magnetic scanning<sup>(2)</sup>, and aerial inspection.

The Scout B1-100 UAV system consists of an industrial-grade autonomously flying helicopter with a customer payload<sup>(3)</sup> up to 18 kg and a flight endurance<sup>(4)</sup> 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](http://www.bacs.ethz.ch)

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