AIRBORNE LASERSCAN

Dom in Magdeburg // laser scan image structured by different height classes.

A7 // Up to 25 object classes for this project were created.
[Airborne Laserscan]

In addition to classical aerial image acquisition, GeoFly also performs international laser scanning projects. Based on our airborne raw LiDAR data acquisition, GeoFly generates digital surface – and terrain models, which can be used for various evaluation processes. Fields of LiDAR data applications include, among other things:

- Large scale terrain model acquisition for country-wide, national surveys,
- Powerline survey flights,
- Special applications for archeology, solar potential cadastre and much more.

GeoFly offers both - full-wave laser scanning, as well as the conventional, LiDAR mode. The conventional mode of airborne laser scanning is measuring the transit time of laser pulses reflected back from the ground to sensor. This method allows precise collection of height information. However, the detection of laser reflections includes both first - and intermediate reflections from the ground and vegetation cover, such as grass and trees. Based on the well-determined position of the aircraft, the constant speed of flight and the time it takes to emit a laser pulse and receive the reflection, the height profile underneath the aircraft is calculated. In the resulting point cloud, height points can be classified into object types. When multiple laser returns are detected, usually because of vegetation cover, the height values for vegetation above ground can be computed. Our GeoFly capabilities for LiDAR processing also include full laser wave mode acquisition and processing. Additional information can be extracted and analyzed from the wave - from characteristics of the recorded laser returns, enabling for example the classification of the physical surface materials. Our airborne laser scanning technology enables us to carry out LiDAR aerial surveys even at night and in any season. Depending on the flight parameters, the vertical accuracy of the terrain models we supply can be better than 10 cm.

[References]

Germany
- 2015 - 170 km²

Brazil
- 2014 - 1.057 km²

Luxembourg
- 2011 - 2.500 km²