

WE UNCOVER THE HIDDEN.

www.geofly.eu



ABOUT **GEOFLY**

We are GeoFly, a team of engineers, pilots, operators, and data professionals. Since 2008, we have collected and refined geodata for cities, utilities, and planning offices, including high-resolution orthophotos, LiDAR, thermography, and photorealistic 3D models. Our work establishes a solid foundation that makes planning more reliable, processes faster, and decisions more transparent.

GeoFly is headquartered at the Magdeburg Business Airport in Saxony-Anhalt. With our own fleet, state-of-the-art sensor technology, and integrated processes, we deliver end-to-end services – from flight planning, flying, and processing to delivery. We systematically ensure quality and environmental standards through ISO 9001 & 14001 certifications.

Data Collection and Use: Our products can be used directly within the team, in GIS and in reporting thanks to online services and software such as AFM for flight planning and QC, as well as viewer solutions for orthoimages, oblique images, and 3D images. Every project creates clear added value – technically sound, transparently documented, and compatible with your workflows.

We operate throughout Germany and internationally, providing services ranging from large-scale aerial surveys to projects in complex infrastructure areas. Thanks to our own aircraft, experienced team, and defined QA standards, we can respond quickly and consistently deliver high-quality results.

@geoflygmbh

DIGITAL IMAGE FLIGHT

THE DIGITAL IMAGE FLIGHT FORMS THE BASIS FOR THE SUCCESS OF A PROJECT AND THE GEODATA GENERATED FROM IT.

We capture stable, high-resolution image data using state-of-the-art large-format sensors and high-performance cameras. These cameras provide clean geometry and consistent radiometry, ensuring seamless processing into orthophotos, true orthophotos, 3D models, and analyses.

FIELDS OF APPLICATION

- Land survey
- As-built documentation in route planning
- Urban planning
- Environmental planning

SERVICES AT A GLANCE

- Accurate flight planning
- Image flight with high-resolution special cameras
  - 2 UltraCam Eagle Mark 3
  - 1 UltraCam Osprey Mark 4.1
- Survey accuracy up to 5 cm (3D)
- Colour and infrared imagery





ORTHO- & TRUE ORTHOFOTO

DIGITAL ORTHOPHOTOS ARE RECTIFIED AERIAL PHOTOGRAPHS WITH THE GEOMETRIC PROPERTIES OF A MAP AND THE INFORMATION CONTENT OF A PHOTOGRAPH.

The main difference is that a true orthophoto uses a Digital Surface Model (DSM) to completely remove perspective distortion and building lean, resulting in a geometrically accurate image where objects are viewed from directly above. A traditional orthophoto, in contrast, uses a Digital Terrain Model (DTM) which corrects for terrain distortions but may still show tilted buildings, especially those with significant height.

FIELDS OF APPLICATION

- Background information in the GIS
- Planning basis
- Basis for cadastre (outdoor area, tree, street cadastre and others)
- Online city maps
- Topography survey

PERFORMANCE OF THE ORTHOPHOTO

- Rectified and true-to-scale image
- Four-channel image (RGB + infrared)
- Ground resolution up to 2 cm

ADDED VALUE OF THE TRUE ORTHOPHOTO

- Aerial survey with increased image coverage (80 %/60 %)
- No blind spots
- Derivation of surface models (bDOM)

3D-MESH

3D MESHES PROVIDE A REALISTIC VIEW THAT CAN EASILY BE INTERPRETED FROM A NATURAL PERSPECTIVE. THIS INCLUDES ALL OBJECTS, SUCH AS BUILDINGS AND VEGETATION, IN THE THIRD DIMENSION.

The 3D mesh is one possible form of a city model, represented as a textured triangular mesh. It is derived from an oblique image flight through a fully automated process chain. The result is highly detailed.

FIELDS OF APPLICATION

- Visualization for urban planning (3D online city maps)
- Visibility analyses
- Real estate (exposé)
- Tourism / city marketing
- Environment (e.g. tree cadastre)
- Disaster management
- Solar potential calculation

SERVICES AT A GLANCE

- Three-dimensional representation of the earth's surface incl. objects
- Textured triangular meshing
- Derivation from nadir and oblique images
- Online visualisation via Cesium
- Further formats: *.obj, *.osgb, *.ive, *.dae





OBLIQUE FLIGHT

OBLIQUE IMAGES CONVEY A REALISTIC PERSPECTIVE AND GIVES THE VIEWER A FEELING OF SPATIAL DEPTH IN THE IMAGE.

Oblique images are a welcome addition to many projects because they provide a familiar view of the environment, even for non-expert users, and thus offer better orientation. Additionally, they provide access to information that is not visible in orthophotos, such as building facades, side views of bridges, and passageways.

FIELDS OF APPLICATION

- Visualization for urban planning
- Real estate (Exposé)
- Tourism / city marketing
- Environment (e.g. tree cadastre)
- Disaster management

SERVICES AT A GLANCE

- Digital oblique image flight
- Simultaneous nadir image
- Infrared data in nadir
- Textured 3D mesh from nadir and oblique
- User-friendly display in an oblique viewer (e.g. obviewsly.de)

LASERSCAN

LASER SCANNING IS A PROCESS THAT UTILIZES LASER BEAMS TO SCAN THE EARTH'S SURFACE.

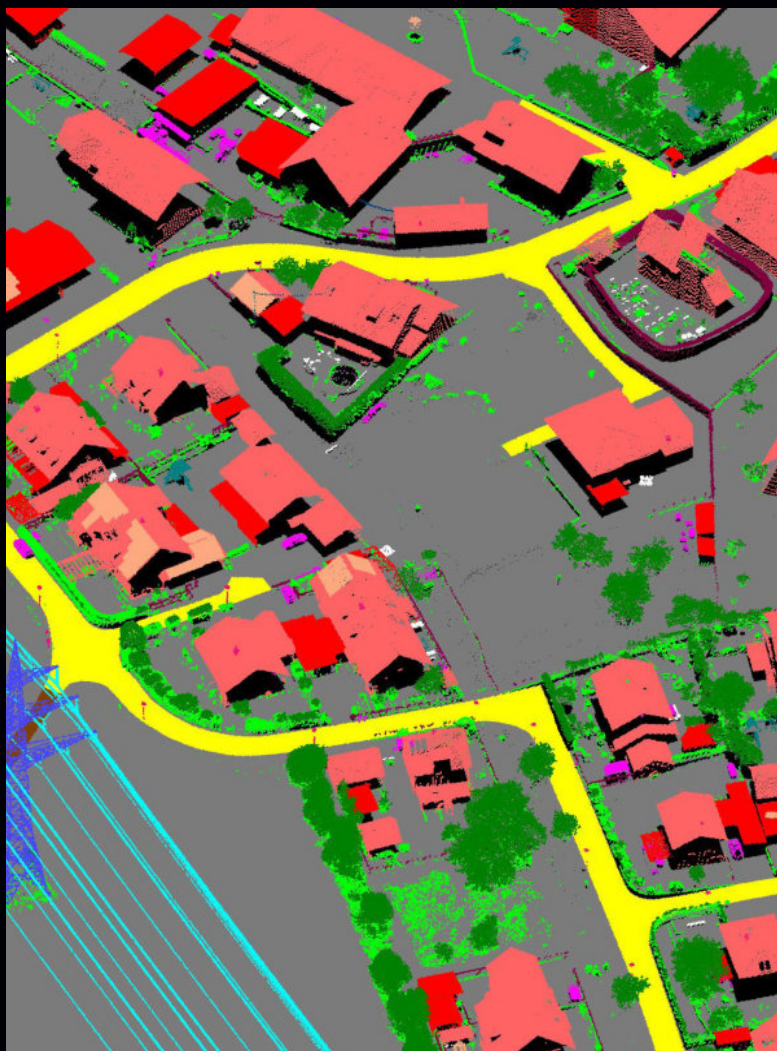
Airborne laser scanning technology enables the scanning of the earth's surface including all objects. Scanning of the ground in areas of vegetation is also possible. Depending on the flight configuration, the resulting terrain model can have an accuracy of less than 10 cm. These flights can also be carried out at night.

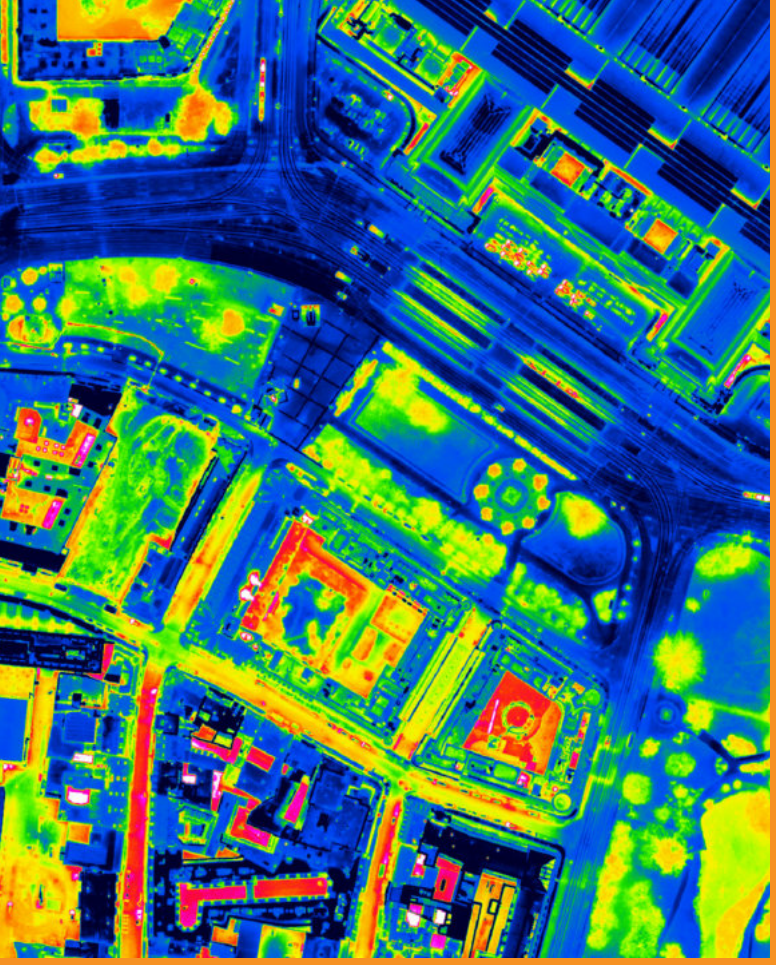
FIELDS OF APPLICATION

- Land survey
- As-built documentation in route planning
- Disaster management, e.g. flood prevention
- Environmental planning

SERVICES AT A GLANCE

- Scanning of the ground is also possible in vegetation areas
- Derivation of a DTM also possible in forest areas
- Round-the-clock aerial survey possible (independent of the position of the sun)
- Classification of laser scan points





THERMOGRAPHY

THERMOGRAPHIC CAMERAS CAPTURE HEAT AND COLD SIGNATURES ON THE EARTH'S SURFACE.

Airborne thermography can detect a wide variety of heat sources. It is primarily used at night under clear skies. The camera is accurate to 0.025 K, and the resolution depends on the application, typically ranging from 25 cm to 1.5 m.

FIELDS OF APPLICATION

- Monitoring of district heating networks
- Urban climate maps
- Fire source detection
- Heat loss from buildings
- Animal census
- Water discharge

SERVICE AT A GLANCE

- Georeferenced heat maps
- Maps individually adapted to the theme
- Hotspot detection
- Evaluations and analysis

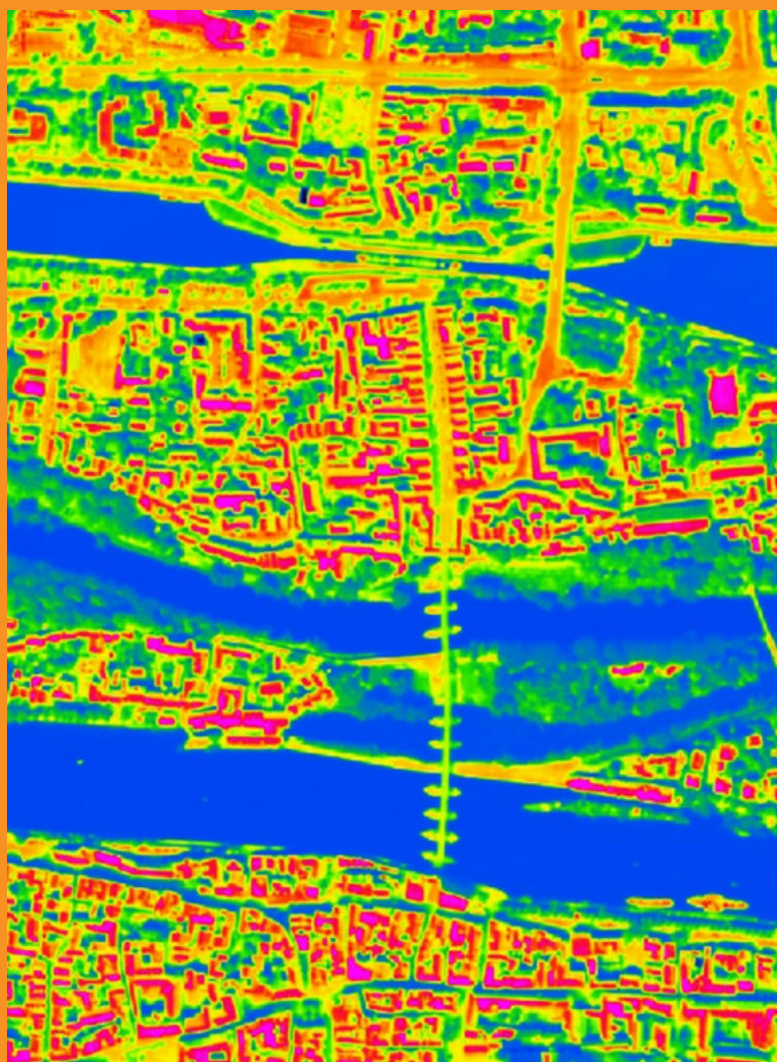
REMOTE HEAT

AIRBORNE THERMOGRAPHY QUICKLY AND RELIABLY LOCATES LEAKS AND INSULATION DEFECTS, PROVIDING RELIABLE INFORMATION FOR ACTION PLANNING, INVESTMENTS, AND REPORTING.

We analyze the condition of district heating networks from the air using powerful infrared sensors. Leaks, insulation defects, and water losses are visualized in georeferenced, true-to-scale thermal maps with high positional accuracy and clear evaluation. These maps provide utilities with a quick overview of the network's status and precise locations for maintenance and efficiency improvements.

SERVICE AT A GLANCE

- Survey of the route corridor (including above-ground and underground lines) with subsequent GIS compatible evaluation
- Result package: thermal map, hotspot/
- anomaly list with coordinates and relevance classes (heat loss classes)
- Documentation for action planning and monitoring over time





ONLINE-SERVICES & SOFTWARE

OBVIEWSLY – THE ONLINE OBLIQUE IMAGE VIEWER

ObViewSly makes geospatial data accessible in the browser for a wide range of users – right where it is needed. (True) orthophotos, oblique aerial images in multiple viewing directions, and 3D meshes can be intuitively explored, compared, and measured – without installation can be used directly within the team.

Measurement functions in 2D/3D provide reliable length, area, and height values; results can be documented, exported, and shared. A solar potential calculation is also available at the building level.

FEATURES & BENEFITS

- View (true) orthophotos and oblique aerial images
- Measurement functionalities in 2D and 3D
- Notes, screenshots/reports, shareable links for quick collaboration
- Display of additional technical data/layers for context in planning and operation
- Browser-based, role-based access – no local installation required

www.obviewsly.de

AERIAL FLIGHT MANAGEMENT

Aerial Flight Management (AFM) combines flight planning and quality assurance – centralized management of projects, sensors, and fleet, upload/evaluation of flight data, including transparent reports.

- Flight planning and quality assurance tool
- Management of projects, sensors, mount units and aircrafts
- Upload of flight plans, data captures and trajectories
- Quality assurance of the flight results
- Evaluations (reports) and much more

SOLAR CADASTRE/ SOLAR CAPACITY ANALYSIS

Solar cadastre are online portals that provide information on the solar potential of each roof in a city or municipality, e.g.

- Suitability for photovoltaic or solar thermal systems
- Potential income statement per year
- CO2 savings per year
- Determination of the optimal module area for each roof in square meters

GROUND MOVE-MENT PORTAL

The online ground movement portal is used to visualize height changes in the mm range based on inter-ferometry data.

- www.bodenbewegung.de

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