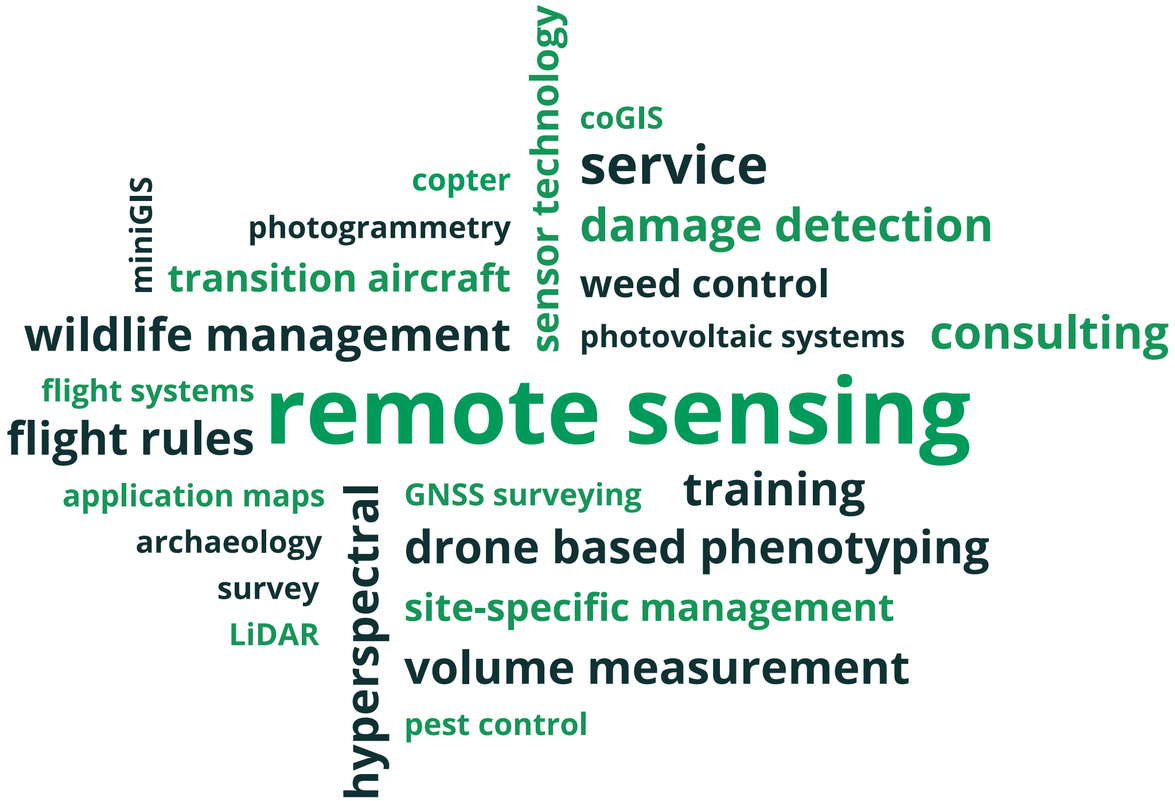
Remote sensing

Aerial data for cross-industry solutions

geo-konzept

inventarisieren. kartieren. optimieren.

01/2026



Remote sensing with geo-konzept

The world looks completely different from above. Information can be captured more easily, quickly and accurately – and be analysed afterwards. The areas of application are wide-ranging and the results can often be used in a variety of ways.

The UAV specialists (UAV = unmanned aerial vehicle) at geo-konzept use their expertise to compile and offer industry-specific solutions.

As a pioneer in the commercialization of UAV services and technology, we can now draw on around 15 years of experience. This wealth of experience enables us to offer professional services across the entire spectrum of remote sensing as well as a wide range of flight systems and sensor technology. Supplementary technology such as special sensors, cameras and specific software for evaluating the recorded data complete the product portfolio. The combination of the best components results in a tailor-made solution for your application. To round everything off, intensive training with the flight system, sensor and software is an integral part of our offering.

The field of remote sensing is incredibly exciting and varied – with geo-konzept, you have exactly the right partner if you are interested in UAVs.

All information can be found on our webpage.

Aerial solutions are limitless:

Thanks to a wide range of payloads, there are few limits to aerial solutions. Extensive sensor technology and high-resolution cameras combined with customized software provide us with information for fast and comprehensive decision-making.

The use of UAV solutions is in many industries sensible and economical.

agriculture

flight systems

agricultural field trial management

wildlife monitoring

surveying

service & know-how

Drones come in different shapes and sizes. There are flexible all-rounders and highly specialized drones for specific tasks. In order to keep an overview of the market, we assist you in finding the right solution for your needs.

COPTER:

We offer different systems specifically adapted for your tasks. You can choose between larger systems with flexible payloads and therefore a wide range of possible applications or smaller systems for specific working areas.

performance features

- selectable payloads
- high flexibility
- fast installation of sensors

VTOL (VERTICAL TAKE OFF LANDING):

The Trinity Pro from Quantum Systems combines the advantages of a copter with those of an aerodynamically efficient fixed-wing aircraft. This means that take-off and landing are vertical and require little space. After transition, the wings provide lift, requiring less propulsion energy than a copter. This allows even large areas, such as fields and quarries, to be covered in a single flight.

performance features

- vertical take-off & landing
- high area performance due to fixed-wing flight
- quickly changeable payloads
- can be dismantled in a clever way for easy transportation

flight systems

	small drone	professional drone	special solution	transition flight system	autonomus hangar incl. drone
C class	C1 / C2	C3 / C4	C3 / C4	C3	C6
sensor changeability	X	✓	X	✓	X
area performance					
costs	€€€	€€€	€€€	€€€	€€€

More information about working with DJI Dock.

DJI Dock 3 – The automated mini hangar

The DJI Dock 3 is a fully automated drone hangar that enables autonomous flights, precise landings, and fast charging. It is the next logical step toward autonomy.
The compact and secure high-tech hangar is specially designed for the Matrice 4D or 4TD, which are equipped with the high-performance cameras of the Matrice 4 series, but offer better flight performance and greater safety. Dock 3 is suitable for year-round outdoor use and is designed for recurring tasks such as inspection, surveying, inventory, and security monitoring.

DJI Flight Hub 2 can be used to plan, monitor, and document flights. Automated data analysis is also possible. Both the weather data recorded by the hangar in real time, such as precipitation, wind speed, and temperature, and the online weather forecast queried ensure safe, weather-appropriate operation.

DJI drones – high tech in the air, experts on the ground

Drones from manufacturer DJI have long been the leading flight systems in professional applications: they are known for their user-friendliness, high image quality and advanced technology, and offer outstanding efficiency for a wide range of applications.
As a pioneer with around 15 years of experience in the field of drone technology, geo-konzept attaches great importance to offering its professional customers the best technology available on the market so that they can benefit from advantages such as fast data acquisition, high safety and reliable obstacle detection.
Surveying tasks, volume determination, documentation, wildlife search, inspection, assessment, testing – in combination with our in-house software products, we provide you with ready-made solutions for all conceivable applications.

ENTERPRISE

flight systems

QUANTUM SYSTEMS

Trinity Pro (Quantum Systems)

With Trinity Pro from Quantum Systems, we offer an ideal UAV system for flying over large areas. A system that combines the advantages of a vertical take-off copter with the aerodynamic efficiency of a fixed-wing aircraft. With a flight time of up to 90 minutes per battery, this VTOL offers market-leading area coverage at a reasonable price and can be used almost anywhere thanks to its vertical take-off capability.

Popular areas of application include not only large-scale flights for surveying purposes, but also disaster control, where it can be used to quickly create an up-to-date picture of the situation and provide an overview of large areas of operation.

Six different fully integrated payloads, including RGB and multispectral cameras as well as LiDAR, ensure the right results and perfect data. The payloads can be exchanged quickly and easily, making workflows even simpler.

The system is designed for efficient use and is offered by us as a ready-to-use complete set with matching software and training.

More information about Trinity Pro.

The Trinity Pro in action.

agriculture

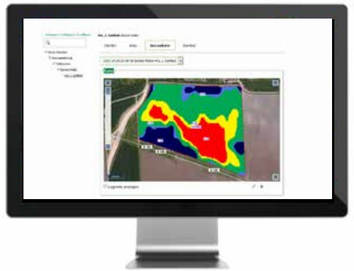
Site-specific management

geo-konzept offers you a practical and efficient system solution consisting of hardware and software for fast and independent site-specific analysis of agricultural land.

In combination with the coGIS software, the multispectral package is an ideal tool for a wide range of precision farming applications. With a suitable drone, you can cover even larger fields and measure them precisely.

With the help of coGIS, the generated data can be processed and evaluated automatically. This allows vegetation indices to be calculated independently and quickly and easily converted into zone and application maps. The latter can be transferred directly to the tractor's automatic steering system on site, ensuring site-specific application of seeds, fertilizer, etc.

coGIS



PLANNING

- intuitive flight planning
- retrievable and repeatable at any time
- in the office or in the field

FLIGHT

- efficient, fast and reliable
- safe and easy handling

EVALUATE

- repeatable
- objective
- flexible

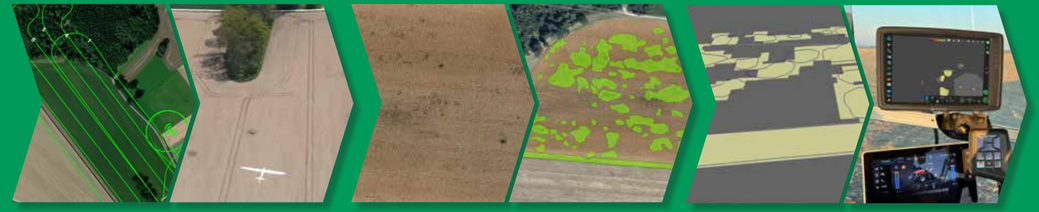
APPLICATION MAP

- create an application map and send it directly to the machine in the correct format (ISOXML, etc.)

Weed control with SpotiSpray

The self-developed coGIS module SpotiSpray, in combination with an aircraft system, offers the possibility of targeted weed control. Farmers, service providers, and machinery rings can use aerial images to reliably identify root weeds in row crops such as corn, beets, or potatoes and, with just a few clicks, create an application map that can be used for several years.

This means that pesticides are only applied where they are needed. This reduces the total amount applied and simplifies application. SpotiSpray not only shows the areas to be treated, but also calculates the theoretical total amount of pesticides required for a specific field.
This solution opens up possibilities for efficient, site-specific soil cultivation or application of plant protection products.

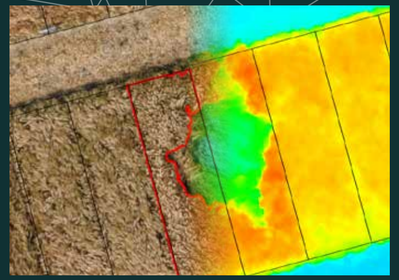


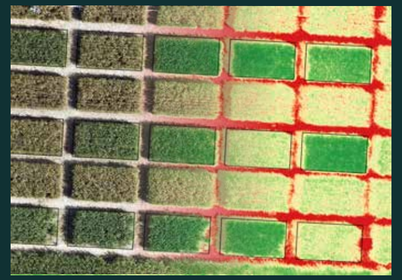
More information in the webinar.

agriculture

Intercropping & undersowing

With a specialized drone, it is now also possible to sow seeds from the air. If external circumstances make vehicle-based sowing difficult or impossible (e.g., limited accessibility of the ground or mature crops), there are options for dropping seeds from a low altitude in a targeted manner. The UAV flies autonomously along flight paths and the application rate is regulated according to speed and flow rate, as with a seed drill.



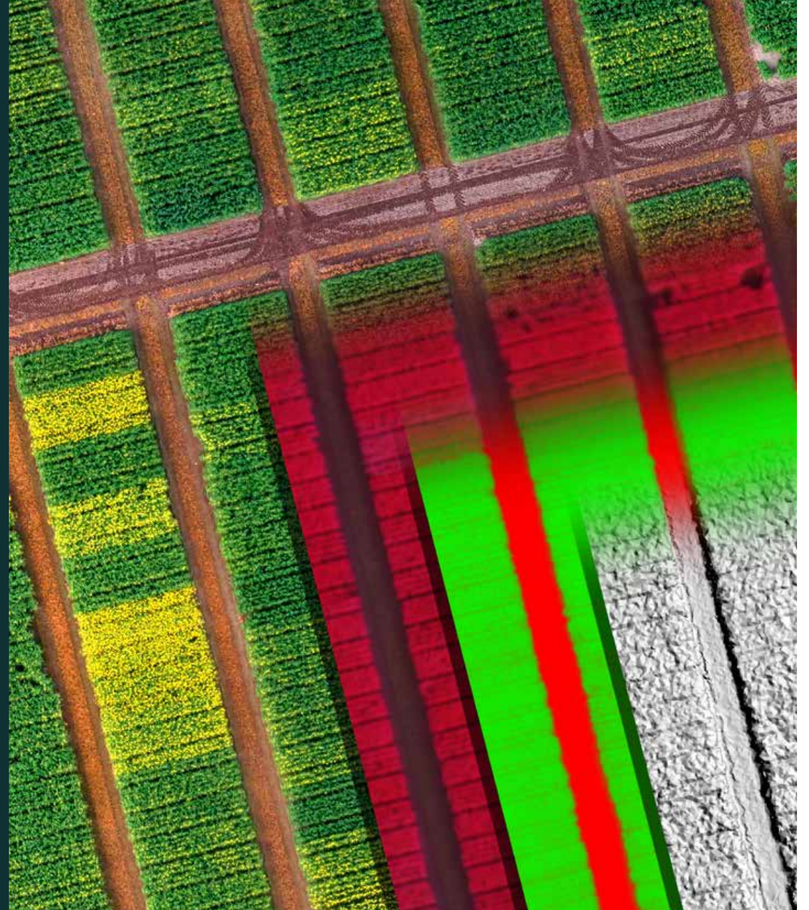


UAV-based scoring

Agricultural field trials place the highest demands on employees, machines and sensors. Our UAV solutions meet these requirements and guarantee the highest data quality and availability. Whether hyperspectral, multispectral, thermal or RGB – with our drone-based scoring system, you no longer lose any time in the field. Numerous plots can be assessed easily, quickly and accurately with one flyover.

The plots are assigned automatically. The time-consuming and error-prone manual transfer and digitization of lists is no longer necessary. Various sensors enable the recording of a large number of scoring characteristics. Our scoring system is the perfect combination of the latest scientific knowledge and a practicable, independently executable procedure.

Agricultural field trial management



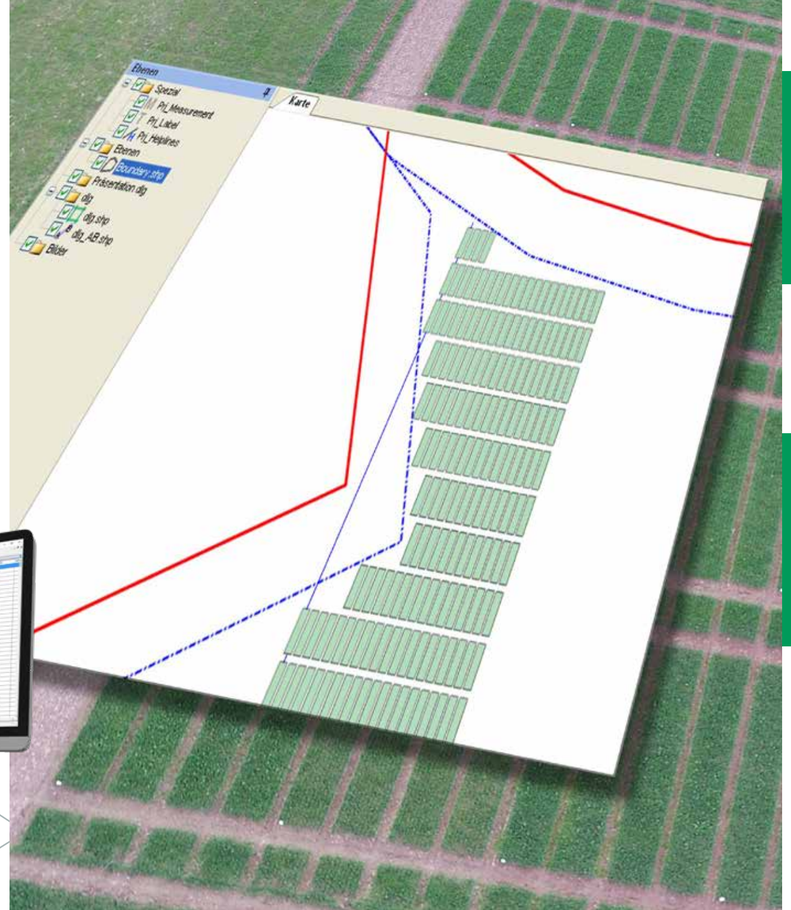
SCORING PARAMETERS:

- record the number of plants
- measure the degree of ground cover
- evaluate juvenile development
- recognize differences in biomass
- record wintering damage
- objectively assess disease infestation
- easily detect flowering behaviour
- measure crop height & evaluate lodging tendency
- recognize differences in ripening
- analyse and evaluate drought and heat stress
- counting ears of corn with AI

miniGIS

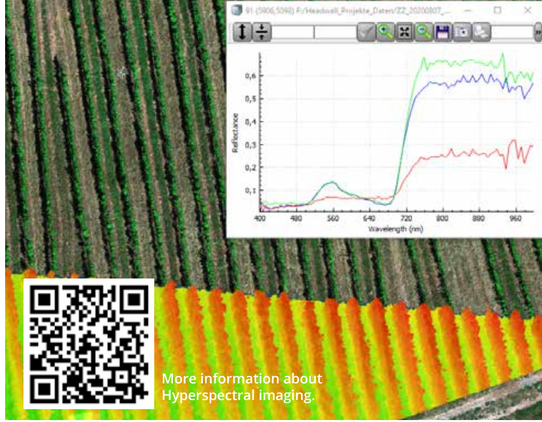
With our plot planning software miniGIS you can plan field trials and sow automatically. After the flight, the data can be evaluated and exported graphically and in tabular form. With miniGIS, it is possible to reproduce the complete workflow of automated scoring.

miniGIS has become a standard tool in field trial management thanks to the extensive and specially tailored application options.



Hyperspectral imaging

The technology of hyperspectral image analysis enables a deeper insight into plant populations. The spectral signature can be captured with high precision over the entire wavelength range. This is an important tool for research institutions, universities and professional service providers. geo-konzept offers complete solutions with sensor, drone, software and training as well as the option of integrating a sensor into an existing drone on your premises.



Phase One P3/P5

Danish manufacturer PhaseOne has been developing high-resolution imaging technologies for over three decades and offers the P3, an RGB camera with unmatched image quality. The large medium format sensor, together with the calibrated lenses, offers the best combination of resolution, precision, and dynamic range on the market. PhaseOne's cameras, designed specifically for drones, are responsive, robust, and can be easily integrated with both DJI copters and the Trinity Pro VTOL for various inspection and mapping missions. The wide dynamic range allows for complete information retention even in difficult lighting conditions, eliminating the need for costly re-flights. This saves time, reduces operating costs, and increases the reliability of your mission.

PHASEONE
IMAGING BEYOND IMAGINATION

agricultural field trial management

Headwall Photonics

Headwall Photonics is one of the world's leading manufacturers of hyperspectral sensors, which are characterized by high processing speed, compactness, and excellent data quality. The system also offers the ability to cover large areas in inaccessible terrain and with limited payload. Ideal areas of application are testing, research, and the general mining and remote sensing industries.

Our long-standing close partnership has resulted in projects such as the Center for Hyperspectral Remote Sensing in Europe (CHRSE) with its annual workshops and the international service network FlyHSI.

More information about FlyHSI.

CHRSE

Together with Headwall Photonics, geo-konzept founded the CHRSE (Center for Hyperspectral Remote Sensing in Europe). The aim is to give interested parties access to hyperspectral sensor technology and familiarize them with the workflow of data generation and evaluation through on-site training courses, demo flights, regular workshops, and services.

SPECTRAL EVOLUTION
The Future of Field Spectroscopy is Now!

Spectral Evolution

Remote sensing does not always have to involve drones: Portable UV-Vis-NIR spectroradiometers and spectrometers are ideal for applications such as plant and soil analysis, mineralogy and geology, vegetation studies, environmental and climate research, and spectral measurements of all kinds.
The spectrometers offer an optimal combination of high resolution and high sensitivity, are among the most accurate portable instruments on the market, and enable fast full-spectrum measurements from 350-2500 nm with just one scan.

All spectroradiometers are equipped with exclusive data acquisition and analysis software that enables comprehensive spectroscopic analysis of the sample at the touch of a button. The automatically saved ASCII files can also be used without post-processing with third-party software.
Depending on the model, the devices also provide a real-time video feed of the actual field of view of the fiber optic or lens attachment.

More information about fawn rescue.

Wildlife monitoring

Wildlife populations and their habitats are continuously recorded, observed and monitored. In addition to the previous methods of wildlife monitoring, the use of drones has become established in recent years. The use of thermal imaging cameras in particular has revolutionized the search for wildlife from the air. The technical development of these „flying helpers“ now enables efficient and comprehensive monitoring, so that in addition to fawns wild boars can also be found quickly and easily.

ADVANTAGES

- quick overview of large areas
- high efficiency due to low expenditure of time
- complete area coverage
- animals are not disturbed
- independent of the road network
- even areas that are difficult to access can be searched
- wild animals can be targeted
- decoupling of search and mowing process (no interruption of the mowing process)

FAWN RESCUE

Drones with thermal imaging cameras can save fawns from being mowed to death. This is done in close cooperation between hunters, farmers and volunteers.

Quelle: Peter Schroppel

GROUND-NESTING BIRD PROTECTION

Many ground-nesting species are threatened with extinction. Clutches endangered by mowing and harvesting machines can be detected from the air using a thermal imaging camera.

WILD BOAR MANAGEMENT

Animal movements and populations can be efficiently monitored on large areas. This requires only little personnel and time expenditure.

wildlife monitoring

Surveying

Volume calculation

Together with our VolumeX software, our UAV systems offer an ideal platform for calculating volumes and tonnages in many areas. The point cloud created using photogrammetry can be converted into a stockpile in VolumeX with just a few mouse clicks and the corresponding volume and tonnage can be determined from this output. The overall package therefore offers the possibility of rapid inventory documentation for service providers and plant operators.

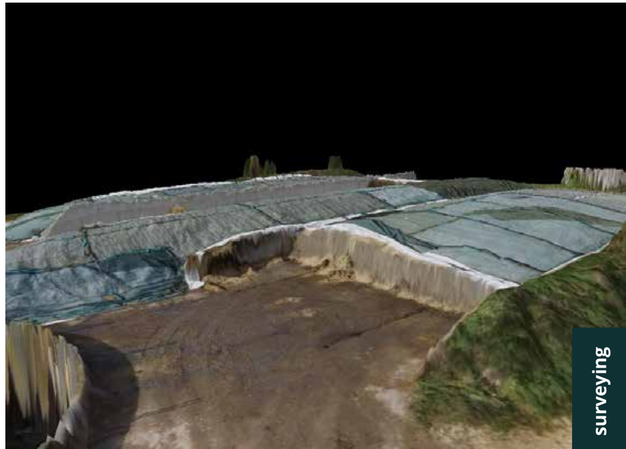
More information about silo measurement.

More information about wood pile measurement.

The nature of the materials is irrelevant in this process. Our approach to volume determination is ideal for quickly calculating storage volumes. Regular inventories can thus be significantly simplified and objectified.

Further application examples:

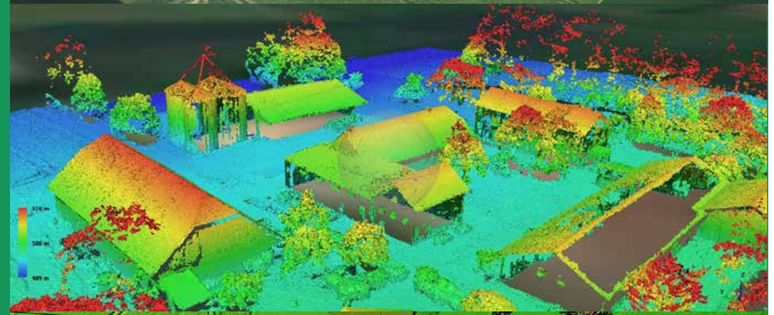
- silos in agriculture
- wood piles in the forestry industry/sawmills
- stockpiles in quarries
- material s tockpiles in building material factories
- garbage dumps

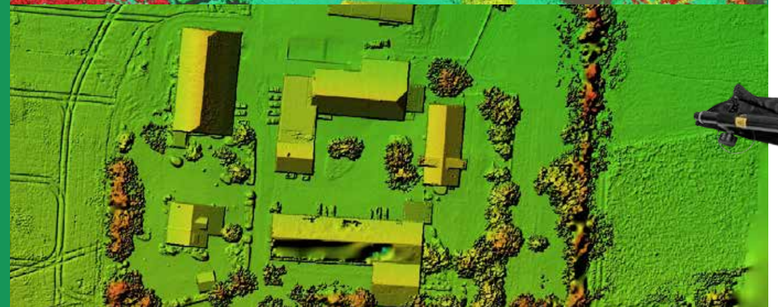


Photogrammetry software

In modern remote sensing, images are much more than just snapshots. With photogrammetry, you can transform simple drone image data into high-precision digital twins of reality: georeferenced orthophotos, terrain models, vegetation indices, or 3D point clouds. We offer software solutions from leading manufacturers to analyze and document complex spatial structures with the highest accuracy, thus creating the ideal basis for further steps such as volume calculations. By evaluating overlapping aerial images, the software generates 3D models that are accurate to the centimeter. Whether it's extensive terrain topography or complex building structures, we convert the physical world into a digital format to perform true-to-scale surveys and document actual conditions.

- Highest precision: Achieve measurement results in the centimeter range for reliable planning.
- Optimal cost-effectiveness: Reduce personnel costs and on-site deployment times through automated workflows.
- Maximum safety: Survey rough or hazardous terrain safely from a distance without putting personnel on site at risk.
- Sustainable documentation: Create a complete digital data set that will still be available for comparison and analysis years later.

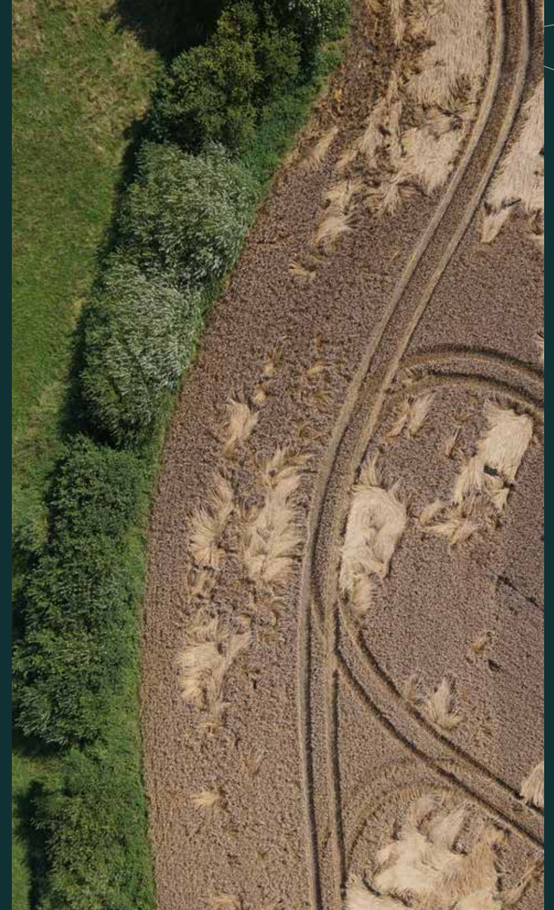




Surveying

geo-konzept is your point of contact for GNSS surveying systems. Our RTK surveying system allows you to measure control points quickly, easily, and accurately. Many remote sensing applications require greater positional accuracy, which can be achieved by measuring ground control points. Measured ground points are particularly helpful for optimizing results in the highly demanding fields of experimental research and regular inventory flights. geo-konzept offers complete solutions for performing these surveys with the necessary precision. Our bundle includes a GNSS receiver with various accuracy levels, an outdoor-ready tablet, the corresponding software, and training on the system. The high-quality receivers also enable oblique measurement, which makes work easier and significantly speeds up the entire measurement process. Finding boundary stones is also quick and easy with the RTK surveying system. The starting point is geodata obtained from the responsible surveying office. The software's navigation function allows the boundary stones to be precisely marked out in the field and found again at any time.

- coGIS or miniGIS software for processing GIS data (see also pp. 12 and 20)
  - Modular design
  - Import of shape files, official survey data, kml files (e.g., Google Earth), and ISOXML files
  - Intuitive navigation function
- Robust, lightweight GNSS receiver Stonex S880
  - High signal stability
  - RTK accuracy of +/- 2.5 cm when using an RTK correction data service
  - Up to 10 hours of battery life
- Surface Go 4 tablet PC
  - Windows 11
  - 10.5-inch screen, sunlight readable
  - Up to 12.5 hours of battery life
  - Wi-Fi capable
- Extendable carbon fiber rod
- Compact carrying case

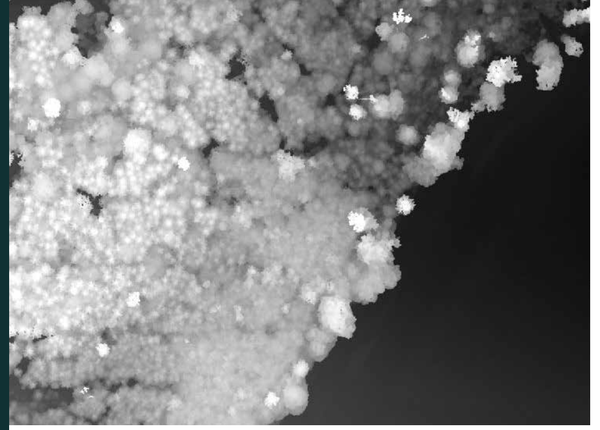


Damage detection

It is often difficult to assess the extent of damage from the ground. With the help of our UAVs, georeferenced aerial images can be created very quickly, making damage not only visible from above, but also objectively quantifiable. The damaged areas (e.g. caused by wild animals or storms) can be digitized and precisely measured in the generated orthophoto. To check these areas, the aerial image can be transferred to a GPS-enabled tablet and the damage can be quickly and easily located on the terrain using our coGIS software.

APPLICATIONS:

- wildlife damage in farmland
- storm damage in forests
- flood damage
- disease and pest infestation

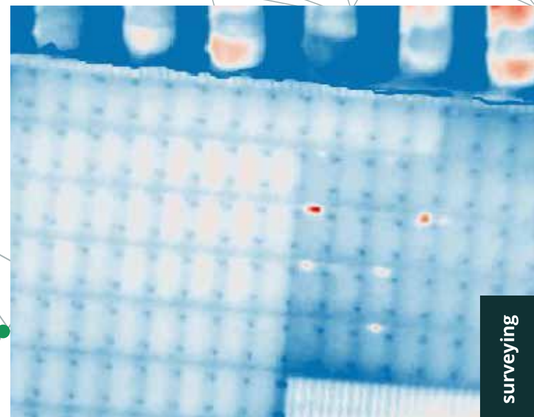


Infrastructure surveying and construction progress documentation

In the construction industry, drones have become a useful tool for surveying construction sites. True-to-scale, high-resolution aerial images with a positional accuracy in the centimeter range capture the current status and provide a quick and uncomplicated way of surveying from the air without having a major impact on the construction sites operations. Even areas that are difficult to access can be easily captured and mapped using UAVs.

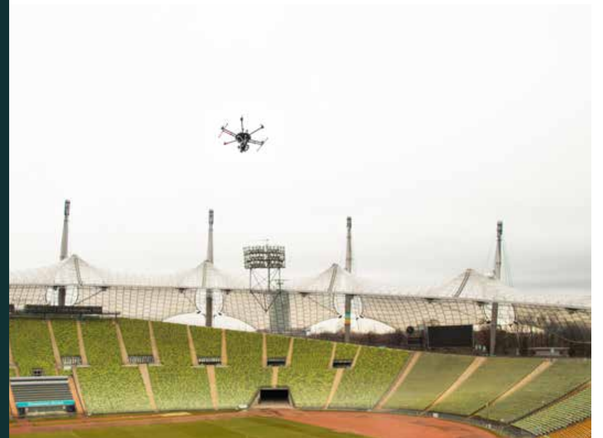
Photovoltaic systems

In combination with a high-resolution thermal camera, our copters make it possible to inspect photovoltaic systems both on buildings and in free-standing solar parks. Defective solar cells are shown in the thermal image by hotspots with a significantly higher temperature compared to normally functioning neighbouring cells. As an entire solar park can be surveyed in minutes by flying over it, this is an efficient and therefore cost-effective meth-od of inspecting such systems.



Archaeology and monument protection

With the help of our flexible drone packages, archaeological excavations, which are often carried out under enormous time pressure, can be documented quickly and easily. An excavation site can be surveyed in a single overflight, then analysed in the office and redrawn into a site plan. In addition, an exact terrain model of the former running horizon or still preserved rising masonry is obtained.
In addition to the excavation documentation, it is possible to detect archaeological finds in the ground by means of a multispectral camera through differences in the vegetation (e.g. in the grain). Thus, targeted aerial archaeology can be carried out with higher resolution than with an airplane.



Service & know-how

Services

For certain issues, a single flight is sometimes sufficient or special knowledge is required to carry it out. In such cases you are welcome to contact us. We will plan the project with you and carry it out according to your specifications. You can evaluate the data yourself or leave the analysis to us and receive the final results including all the raw data.

Our services are customized and tailored precisely to your requirements. We select the appropriate drone from our fleet for each application.

Consulting & service

In order not to lose track of current developments in drones and drone-based solutions, it can be helpful to seek advice. We will be happy to help you find the perfect solution for your business. Perhaps you already own a drone and want to know what else is possible, or you are looking for someone to help you with the implementation of a complex flight project.

We can support you in a number of flexible ways. This ranges from a short half-hour online briefing to a 3-day intensive training course on-site or at our office.

Workshops & training courses

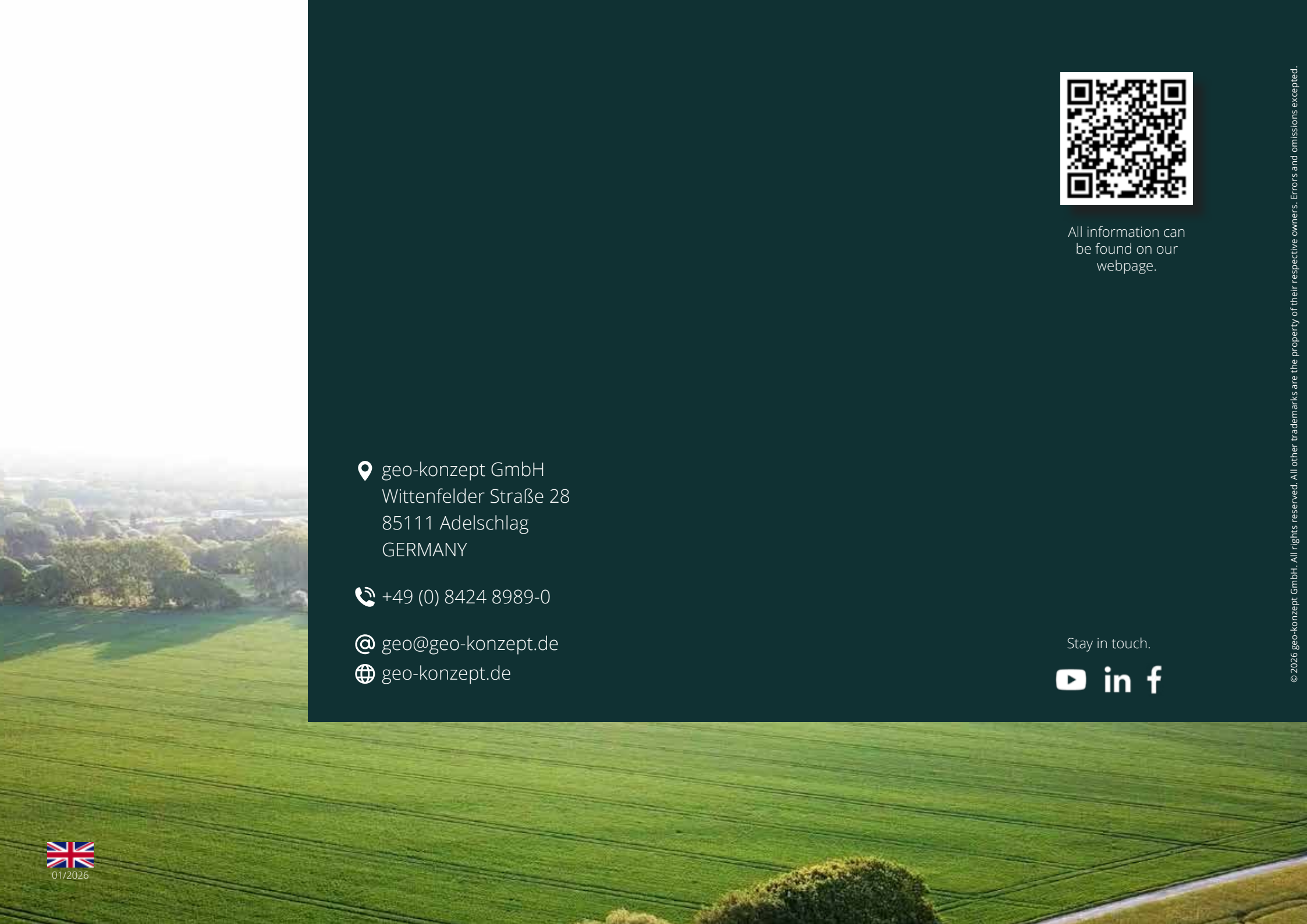
In addition to our telephone support, we also offer individual training courses both on-site and online. Our workshops offer the perfect platform for exchanging experiences, knowledge transfer, training and refresher courses.

In terms of content, our training courses deal with both the handling of the flight systems (flight rules, maintenance, mission planning, execution) as well as the relevant evaluation software (miniGIS, coGIS, Pix4D, Agisoft Metashape, VolumeX and many more).

There are completely customizable, personal training courses as well as generally accessible training courses on specific topics.

Optimise your workflows and get the best out of your systems! Benefit from the experience and know-how of our experts.

There is also the option of receiving training in aviation law and preparing for and taking the A2 license exam with us.



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