



## IGI Camera & LiDAR Systems

### Modular Aerial Camera Systems

*DigiCAM* is a Modular Aerial Camera System for professional, but affordable digital aerial photography. The medium format product range varies from a 40 to 60 megapixel frame sensor. Because of the modular design, camera systems for oblique images are possible, too. Both color images (RGB) and color-infrared (CIR) images are available. A wide lens range (28 - 300 mm) ensures the optimal swath with and altitude for your projects. Complementing the *DigiCAM* family is a system for professional airborne thermography named *DigiTHERM*, featuring a pixel resolution of up to 1 megapixel.

### LiDAR Systems (Light Detection And Ranging)

LiDAR is an optical remote sensing technology for distance measurement. Like the similar radar technology - which uses radio waves - the range to an object is determined by measuring the time delay between the emission of a light pulse and the detection of its reflected signal. IGI uses different laser scanners for their LiDAR systems to meet the optimal requirements. These laser scanners combine new, high performance sensors with inertial waveform processing to record unlimited returns per laser pulse and complete digital processing. Coupled with IGI's position and attitude determination system *AEROcontrol*, these complete systems scan the Earth's surface. During post-processing, millions of points evolve to a landscape 3D model that is used in many applications.

Example of a Powerline Survey - 2 *DigiCAMs* Oblique, 1 *DigiCAM* Nadir with *LiteMapper*, LiDAR Laser Scanner System



# Calidus Aerial Survey



### About AutoGyro

AutoGyro is based at Hildesheim airport, and has grown steadily since starting to make gyroplanes in 2004. As the world Market leader in development, production and sales of gyroplanes, the specialist from Lower Saxony employs a team of over 90 high class workers and engineers.

Within the serial production facility one to two gyroplanes per day are produced and supplied to its recipients all around the globe. In England, the country with the strictest construction regulations (BCAR Section T), AutoGyro in cooperation with RotorSport UK Ltd. succeeded to supply the first ever UK Type approved factory built gyroplane in the market. Furthermore, AutoGyro holds more than 20 patents.

### Worldwide Support

Together, AutoGyro and IGI serve and support a superb global network consisting of more than 60 sales & support partners around the world.

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### About IGI

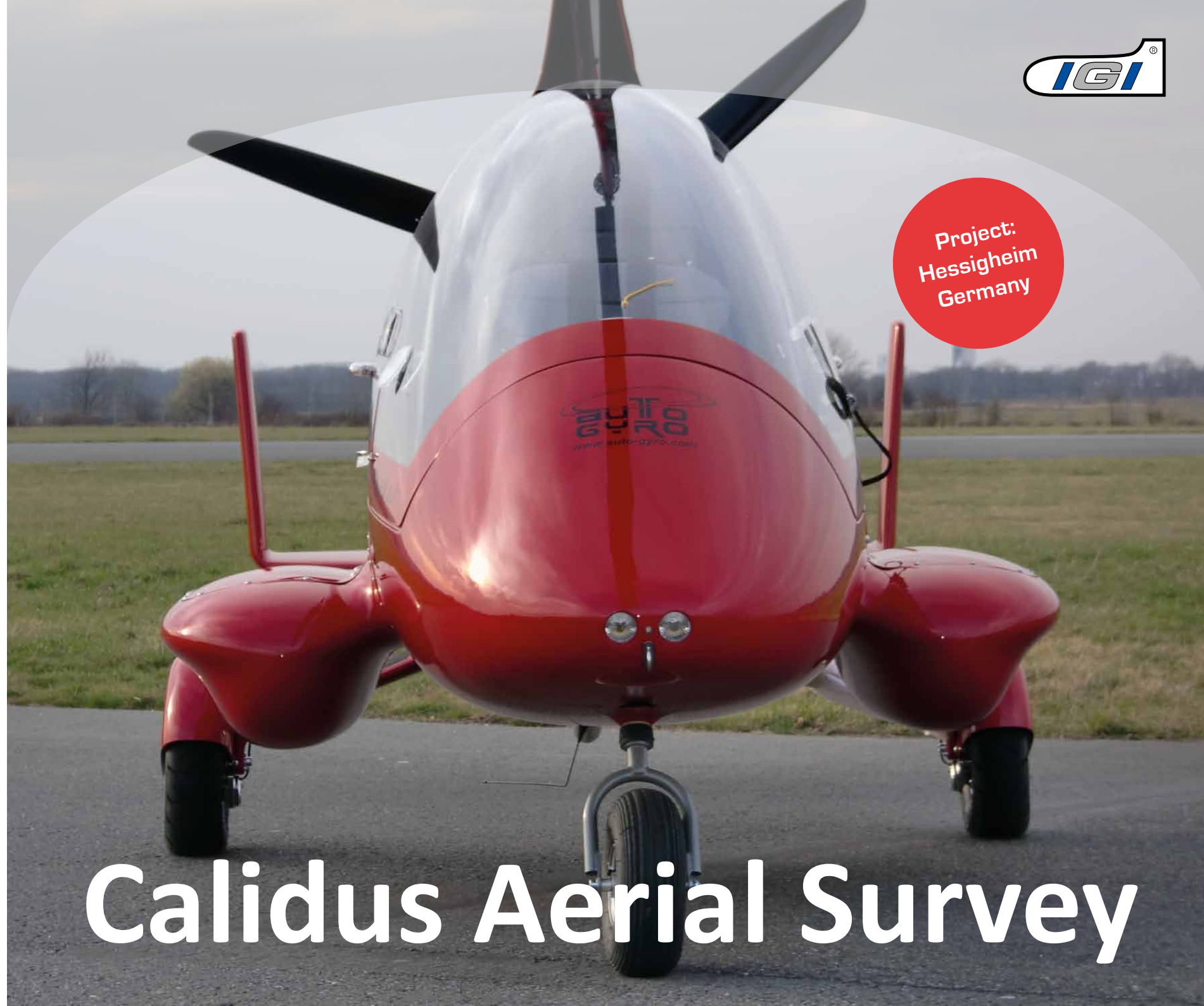
IGI mbH was founded in 1978. The primary goal of the company was to manage airborne sensor systems for flight guidance, sensor control using GNSS (Global Navigation Satellite System) and INS (Inertial Navigation System). Today the portfolio includes additional sensor systems using LiDAR, digital cameras and thermal cameras.

IGI covers a wide variety of expertise in optics, electronics, mechanics, software development, and analytics through a team of highly qualified scientists, engineers and technicians. With over 30 years of experience, IGI offers not only integration of various sensors but also complete sensor systems for airborne and terrestrial survey missions.

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# Calidus Aerial Survey

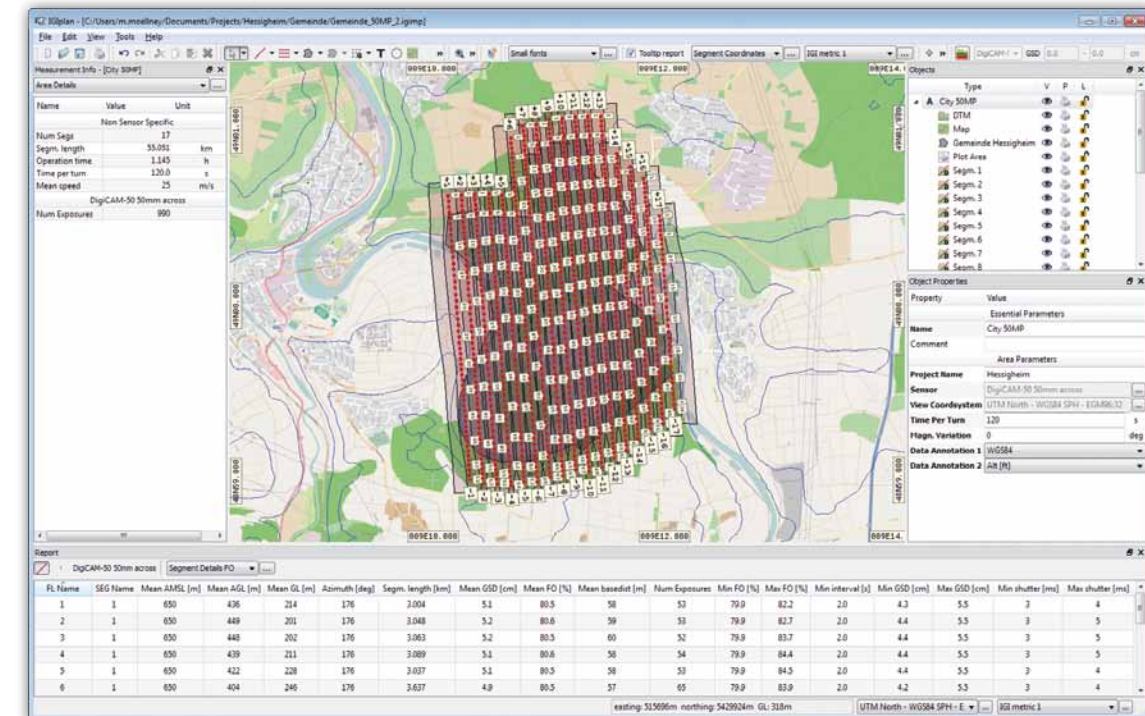




# Mission Planning & Trajectory

# Hessigheim, Germany

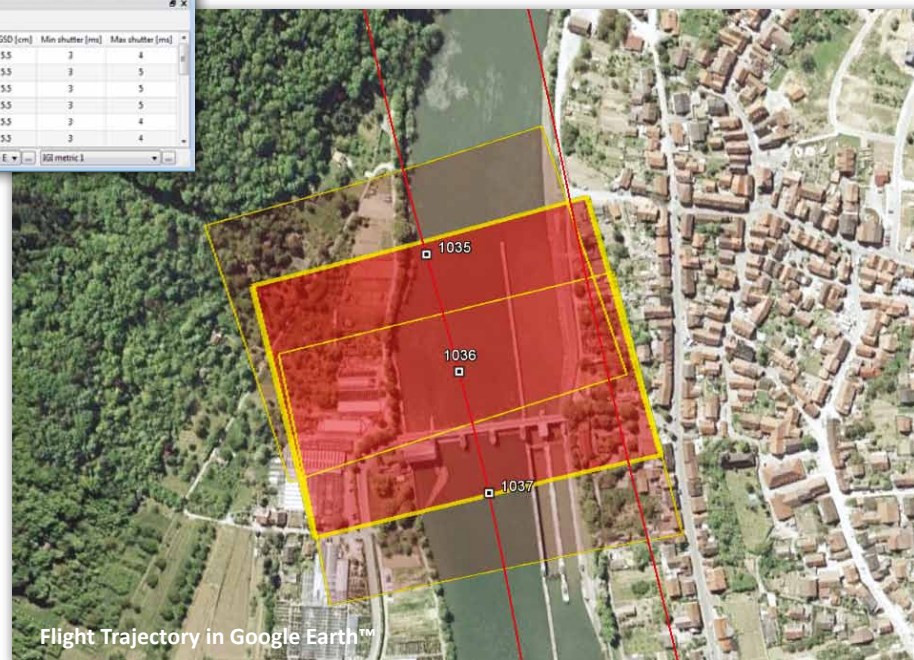
# Flight Guidance & GNSS/IMU Positioning



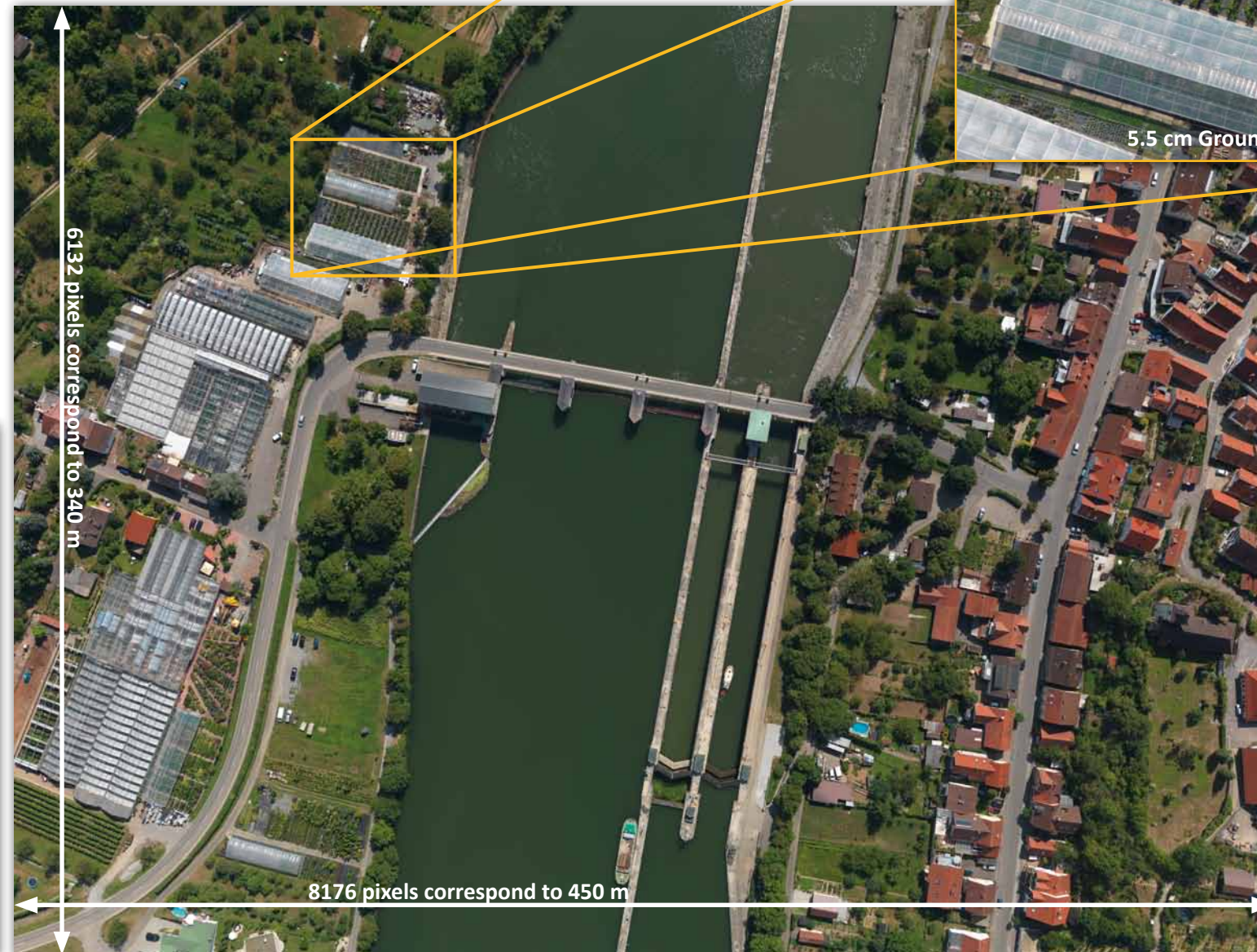
## Mission Planning with IGIplan

IGIplan uses digital elevation models (DEM) to calculate the coordinates of the image positions, the area of coverage and image overlap. Gaps between image positions or flight lines are eliminated and the amount of exposures is optimized.

IGIplan supports various models of optical & thermal frame sensors, different LiDAR and hyperspectral sensors as well as Synthetic Aperture Radar (SAR) sensors and customized multi sensor systems. Since 2010 IGIplan is capable of creating and editing mission plannings for oblique frame sensors, too.



## DigiCAM with 50 megapixel at 470m AGL



**DigiCAM**  
50 megapixel  
50 mm lens  
16 bit colours



## Flight Guidance & Sensor Management System

The Computer Controlled Navigation System - CCNS - today is one of the leading systems for aircraft guidance and sensor management. CCNS-5 has a 6.5 inch display with a couple of control buttons. With an extra bright, sunlight readable display the system is state-of-the-art in flight guidance equipment. Available display information can be personalized in size and colour for different users or scenarios. Map information is displayed in the background for easy orientation during flight. Designed as a mobile system the pilot can easily use his CCNS-5 on different installations. IGI has been the first company to introduce a GPS based flight guidance & sensor management system.

## GNSS/IMU Positioning Systems

AEROcontrol is IGI's GNSS/IMU system for the precise determination of position and attitude of an airborne sensor. The AEROcontrol system consists of an Inertial Measurement Unit (IMU-IIf) based on Fibre-Optic Gyros (FOG) and a Sensor Management Unit (SMU) with integrated high end GNSS receiver.

Together with AEROoffice the system provides the optimal workflow for Direct Georeferencing (DG) and Integrated Sensor Orientation (ISO).



AEROcontrol SMU - Sensor Management Unit with IMU-IIf

## Project Hessigheim

The project Hessigheim was surveyed with a DigiCAM optical frame sensor. With a sensor size of 37 x 49 mm and a pixel size of 6 µm the DigiCAM with 50 megapixels delivers first class imagery.

The complete survey from takeoff to landing took 2 hours and 900 images with 80% forward overlap and 60% sideward overlap were captured. The typical altitude was 470 m AGL at an average flying speed of 90 km/h (50 knots).