PHASEONE INDUSTRIAL

Case Study

Phase One iXU-RS1900 4-Band System Integration by GGS: One Solution; Multiple Applications

GGS GmbH from Germany, one of Phase One's integration partners, has an excellent reputation for innovation and integrating IMU/GNSS and flight management system (FMS) solutions. For more than 12 years GGS has integrated Phase One Industrial's cameras in customer aerial photography solutions. Dr. Gerhard Kemper, owner of GGS, recently trailed iXU-RS1900 metric cameras in several commercial projects to develop a system that could be used in multiple applications.

The IXU-RS1900 and the NIR camera

"We love to integrate Phase One technology into our turnkey solutions!" - Dr. Gerhard Kemper, owner of GGS

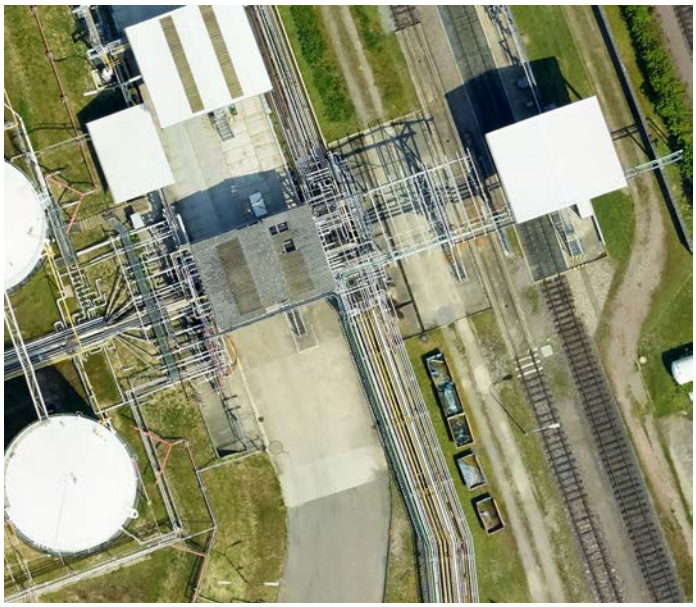
Phase One's iXU-RS1900 camera offers exceptional aerial image coverage, high accuracy, and quality, presenting an excellent alternative to traditional large format cameras in diverse aerial survey applications such as mapping, 3D City modeling, remote sensing, precision agriculture, disaster management and monitoring. The dual head camera uses 90mm lenses to capture a large 190MP image frame. Aerial missions with the dual head configuration become highly productive when compared with a single camera setups.

Phase One's 4-band system is a well-integrated and flexible solution for different tasks in aerial surveying projects. The iXU-RS1900 is combined with an additional achromatic iXU-RS1000 camera with 50mm lens, to simultaneously capture RGB and NIR images thus providing 4-Band (R,G,B,NIR) or CIR imagery. iX Capture software supports a perfect workflow to create the requested images for various projects.

The 4-band system mounted on GGS's AeroStab-M fully compensated gyro-stabilizer is a very flexible and powerful combination that effectively covers vast areas. The AeroStab-M can host 3 to 4 Phase One cameras, with a hole diameter of just 240mm. In combination with AeroTopoL (flight management system) FMS several evaluation missions were performed with a Cessna 206 over the city of Speyer, Germany.

Industrial Site Survey

Peter Schmitt (Dipl.-Ing.), publicly appointed surveyor, was assigned to update the facilities of Pfalz Flugzeug Werke in Speyer. "In the past, infrastructure of industrial areas was updated with classical surveys, GPS and Total Stations. High resolution aerial images from the iXU-RS1900 are now used to generate true orthophotos and close the gaps where surveys of complex infrastructure cannot be applied using classical methods alone. Results are amazing with a resolution of 3.5cm ground sample distance (GSD), which provides clients with a good planning dataset, perfectly fulfilling their requirements."



True Orthophoto of industrial facilities

City Planning and Urban Green

City planners can now receive high resolution images and/or orthophotos in RGB and CIR for use in different tasks within the municipality.

"The quality of information we now receive with the Phase One technology and GGS system is outstanding and the CIR images are perfect to assist the department of Municipal Green Management to check the health status of the trees, for example." Patrick Kürten, responsible for the data management of the city of Speyer has to support various departments of the city management with the central Geographic Information System (GIS).

"The municipality is also eager to use such detailed images for developing 3D models of Speyer. Digitally preserving the cultural heritage of the city requires high resolution data."

3D Model extracted out of the aerial survey

Flood control and Eco-balance

Data has been provided to both planning teams for Struktur- und Genehmigungsdirektion Süd (Structural and Approval Directorate South) and to Neubaugruppe Hochwasserschutz Oberrhein" (New Construction Group Flood Protection Upper Rhine) for planning and environmental issues.

Heinz-Peter Wierig, Ecological Protection, Struktur- und Genehmigungsdirektion Süd:. "We would be delighted to use this quality of data for our entire project area. The data we received for the Rhine valley, south east of Speyer is a fantastic resource for our flood prevention planning which also includes the environmental issues of the Natura 2000 reservation. The extremely high resolution of 2cm GSD in RGB and NIR shows fine details we haven't been able to see until now. We can now zoom further into details which help us to protect sensitive ecological areas much better than we used to."

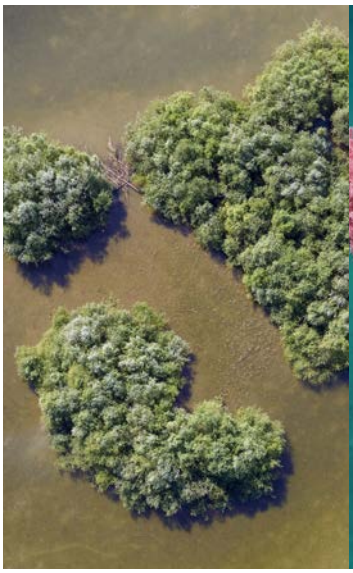
Municipal Action Group for the Elimination of Midge Infestation –

(KABS - Kommunale Aktionsgemeinschaft zur Bekämpfung der Schnakenplage)

Klaus Hoffmann, responsible for the GIS system at KABS. "Using extremely high resolution RGB and NIR data offers us new opportunities. The department operates in a very sensitive ecological area. All flooded areas and old river tributaries are usually located in a protected environment. The incubation period of midges is a serious issue that varies from year to year depending on the climate and hydrological situation."

The department needs detailed data to quickly identify areas where an infestation may conflict with environmental protection, especially bird breeding. KABS cooperates with several ecological institutes and universities, and this type of data provides an important dataset in their GIS.

GGS's integration of Phase One Industrial's 4-Band system offers a cost effective, flexible, lightweight, and reliable resource for combined NIR and RGB aerial imagery. The system can be used in different combinations (together or stand-alone) for varied simultaneous projects. Providing extremely high resolution aerial imagery in several commercial projects the system's adaptability has proven to boost productivity in inspection, city planning, cultural heritage, and agriculture and forestry.



Typical breeding area

Typical breeding area as CIR

About Phase One Industrial

Phase One Industrial is a division of Phase One A/S that researches, develops, and manufactures specialized industrial camera systems and imaging software solutions. The division focuses on specific applications such as aerial mapping and surveying, ground and aerial inspection, agriculture, machine vision and homeland security.

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