SMART SOLUTIONS

Please contact us or your local contact for your custom sensor configurations and installations.

LiteMapper together with *Penta-DigiCAM*

LiteMapper together with *DigiCAM* and hyperspectral camera

LiteMapper together with x1 *DigiCAM* Nadir & x2 *DigiCAM* Oblique

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● International partners

LITE MAPPER®

Airborne LiDAR Systems

PLATFORMS

Designed as a rugged but also compact and lightweight system, the *IGI LiteMapper* can be used in a variety of aircraft, from large airplanes and helicopters to ultra-light airplanes and gyroplanes or even remote piloted aircraft systems (RPAS). All systems are installed on vibration damped platforms or stabilized mounts.

Helicopter

Airplane

Gyrocopter

RPAS / UAV

STANDARD COMPONENTS

As default all *LiteMapper* solutions are delivered with mission planning software *IGIplan*, flight guidance system *CCNS-5* and georeference solution *AEROcontrol.* All components are operated through the *CCNS-5* pilot & operator unit and one large touch-screen for the different sensors.

IGIplan
Mission Planning
Local/Network Licenses

CCNS-5
Flight Guidance
Pilot & Operator Display

Sensor Management
10” or 20” Touch-screen

AEROcontrol
Direct Geo-referencing
FOG or MEMS IMUs

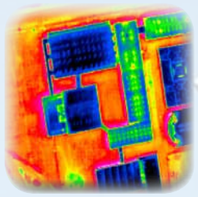
LMTrack
Online LiDAR Coverage

CHOOSE YOUR SENSOR CONSTELLATION

One solution can be equipped with different topographic & bathymetric LiDAR sensors, optical, thermal and hyperspectral cameras as well as a SAR sensor. *IGI* integrated state-of-the-art sensors from brand manufacturers such as Riegl, Hexagon (AHAB), Specim and Fraunhofer FHR.

LiDAR Sensor
Topo & Bathy
Full Waveform
Multiple Pulses

DigiCAM Sensor
Nadir & Oblique
Up to 80 megapixel



DigiTHERM Sensor
Uncooled & cooled
thermal camera head

Hyperspectral Sensor
VNIR, NIR, SWIR
380 - 2500nm

SAR Sensor

TYPICAL APPLICATIONS

The *LiteMapper* has a smooth data workflow to deliver a georeferenced point cloud which is a basis for e.g. a Digital Surface Model and Digital Terrain Model, control of construction progress (set-actual comparison), cross profiles,...

LIDAR

- High Altitude Wide Area Mapping
- Power Line or Corridor Mapping
- Pipeline Inspection and Monitoring
- Coast Line & River Mapping
- Flood Mapping
- Glacier & Snowfield Mapping
- Agriculture & Forestry
- Monitoring of Open-cast Mining
- 3D City Modelling
- Archeology & Cultural Heritage

PHOTOGRAMMETRY

- Nadir & Oblique Imagery
- RGB or CIR Images
- Infrastructure Planning
- Colored DSM & DTM creation
- Cadastre

HYPERSPECTRAL

- Mineral Mapping
- Oil Spill Detection
- Biomass Mapping

THERMOGRAPHY

- Combined Thermal-LiDAR Imagery for Urban Mapping
- Capture loss of heat in:
  Pipelines & Power lines
  Industrial Plants
  Populated Areas

SAR

- Topographic Mapping
- Realtime Applications

SOFTWARE

All relevant parameters during survey are operated through the on-board touch-screen. All solutions come with *IGIplan, CCNS-5, AEROoffice* and post-processing software for the installed sensors.

IGIplan - Mission Planning Software

IGIplan is an advanced mission planning software. Supporting over 600 local coordinate systems and all aerial cameras and sensors, it is prepared for every kind of mission. Working together with the *CCNS*, flight missions can be planned and flown in one connected workflow. The intuitive graphical user interface and its real time computation of flight lines helps the operator in his day-to-day business.

CCNS-5 Configuration Suite

The *CCNS-5 Configuration Suite* includes a *Visual Setup Editor* to customise the *CCNS-5 Info Boxes* and save your settings in personal and aircraft profiles. The *Configuration Suite* also includes the *IGI Flight Simulator* with *GPS Logger* for training purposes in the office.

AEROoffice - GNSS/IMU Post-Processing

AEROoffice implements different forward/backward Kalman filter algorithms to achieve optimal results for airborne, land, water and rail applications. For the transformation of surveyed data into a local coordinate system the software features more than 600 local coordinate systems and a *Coordinate System Editor* for custom adjustments. *AEROoffice* has a special *Lever Arm Tool* for managing and defining the lever arms accurately. With its simplified user interface the package is optimal for all users, even without extensive training and experience.

Sensor Post-Processing Software

IGI integrated state-of-the-art sensors from brand manufacturers such as Riegl, Hexagon (AHAB), Specim and Fraunhofer FHR. All sensor software suites offer import and export filters for the smooth data exchange. All sensors are integrated in *AEROcontrol* for georeferenced data and *IGI’s Sensor Management Units* for sensor control and data storage.

3rd Party Software

Available 3rd party software e.g. Bentley MicroStation & Pointools with the Terrasolid Software Suite, Inpho Software and Exelis Envi can handle the surveyed data for use of GIS, so that the client knows the data of the area and its assets exactly.

PRECISE GEOREFERENCE

At the heart of all Aerial LiDAR Systems is the precise positioning system *AEROcontrol* for direct geo-referencing. Using different export free IMUs, *AEROcontrol* precisely measures the position and flight attitude of a sensor or sensor constellation with up to 600 Hz. The system offers one operator interface for all integrated sensors. Together with *AEROoffice* a streamlined data workflow is offered with built-in lever arm corrections to improve productivity in all aerial mapping applications.

Features:

- One compact system, multiple applications (special forward/backward Kalmann filter algorithms are implemented for airborne, land, water and rail applications)
- 544 channel GPS, GLONASS, BEIDOU, GALILEO, IRNSS, QZSS support, TERRASTAR capable
- Survey grade FOG and MEMS based IMU, all export free
- *IGI Precise Levelling* – Precise, IMU based control of stabilized mounts

PERFORMANCE

Performance*	*Compact MEMS***	*Compact MEMS Plus*	*Compact FOG-I***	*Compact FOG-II***	*Compact FOG-III*
Position [m]	0.02	0.02	0.02	0.02	0.02
Velocity [m/s]	0.005	0.005	0.005	0.005	0.005
Roll / Pitch [deg]	0.015	0.01	0.008	0.004	0.003
True heading [deg]	0.03	0.02	0.015	0.01	0.007
Gyro-Bias [deg / h]	1	1	0.03	0.03	0.03
Gyro-RW (Random Walk) [deg / sqrt(h)]	0.07	0.07	0.005	0.005	0.005
Accelerometer Bias [mg]	0.1	0.1	0.3	0.3	0.3
Data rate	up to 400 Hz	up to 600 Hz	up to 256 Hz	up to 256 Hz	up to 600 Hz

* Post Processing ** Upgrades to higher accuracy possible at any time