GEONISS - AERIAL SURVEY

Complete system for vertical aerial imaging

Very light
High performance
Eco friendly
Cost efficient
Highlights:

- Extremely light.
- Compatible with Nikon, Canon, Hasselblad, FLIR, Hyperspectral cameras, PhaseOne ...
- Small and medium format cameras.
- Primarily used for inside airplane installation.
- Google Earth based pre-planning of aerial survey routes.
- Easy transfer of pre-planned navigation data into Geoniss via USB.
- Automatic camera triggering above pre-planned locations.
- On-screen confirmation of exposed pictures.
- GNSS, IMU navigation.
- Electronic compensation of the camera direction for wind (crab angle) based on magnetic compass or separate GPS, dual antennas.
- Optional Direct Georeferencing Module.
- Optional camera gimbal CSM130 with electronic 3D compensation for heading, pitch and roll.
- Single pilot operation – no camera operator needed.
- GEONISS system consists of:
  - On-board navigation computer – NESIS touchscreen with GNSS receiver (includes engine monitoring and complete EFIS screen with NAV charts) – integrated into aircraft panel.
  - Camera gimbal installed into the adapted baggage compartment.
  - Software Geoniss-Plan for preplanning and on-board navigation.
  - High precision GNSS/IMU module for direct geo-referencing with software (optional).
  - High resolution Nikon, Canon, Hasselblad (RGB and NIR) camera (optional).
  - FLIR thermographic camera (optional).
  - Hyperspectral camera (optional).
  - Multispectral cameras (optional).
  - Optional camera gimbal CSM130 with electronic 3D compensation for heading, pitch and roll.

Technical specifications:

- Weight: 3.2 kg (without camera and Direct Geo-referencing Module)
- Consumption of electricity: 1.4 A at 12V (17W)
- Temperature range: -10°C / +60°C
- Humidity operation range: 30-90%, non-condensing
- Accuracy:
  - SINGLE POINT L1: 1.5 m
  - SINGLE POINT L1/L2: 1.2 m
  - SBAS: 0.6 m
  - DGPS: 0.4 m
  - TERRASTAR-D: 0.06 m (subscription, payable)

Direct geo-referencing module: OEM615/OEM628:

Option 1:
- ADS-11448
  - Accuracy with post-processing:
    - roll, pitch: 0.015°
    - heading: 0.15°
- IMU-ISA100C
  - Accuracy with post-processing:
    - roll, pitch: 0.007°
    - heading: 0.01°
- CSM 130
  - Gyro Stabilization Mount in 3 directions. The electronic mechanical gimbal system and the digital control system are lightweight and particularly suitable for Ultralight Aircrafts.

GEONISS Plan software:
- For Windows, Linux, Mac.

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### Aerospool Survey Pipistrel Surveyor

Aerospool and Pipistrel Survey ultralight airplanes are made from state-of-the-art composite materials with excellent finish. They can be registered like ultralight (472.5 kg, LSA 600 kg) or experimental (750 kg) maximum take-off weight. Excellent glide ratio, rescue system and reliable engines make these aircrafts one of the safest planes to fly.

Today’s ultra-light aircraft offer 3 main technical characteristics that turn them into excellent large scale mapping platforms:

- They often come in composite materials and therefore have excellent aerodynamic shapes and surfaces, which produce less drag.
- The composite structures are usually designed with latest 3D-design methodology which means in practice, they provide advanced flight safety and they maneuver very well.
- They all come with design stall speeds of as low as only 55 km/h, which results in outstanding flight safety in lower altitudes and at low speeds.

- Class-leading low fuel consumption (18 liters/hour in high speed operation and 10 liters/hour in loitering/observation mode).
- Superior payload and flexibility – even with full fuel tanks, two pilots can carry out missions or train, thanks to dual cockpit controls.
- Extra-low operating costs combined with high dispatch rate.
- Extra-line maintenance costs with maintenance packs included in purchase price.
- Strong undercarriage suitable for operation on unpaved runways.
- In case of emergency the full-aircraft parachute protects the crew together with airframe and all the equipment.

We do what no other can

#### SURVEY ULTRALIGHT AIRPLANE

<table>
<thead>
<tr>
<th>Aircraft type</th>
<th>Dynamic Survey</th>
<th>Pipistrel Surveyor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine</td>
<td>Rotax 912 S, 914</td>
<td>Virus SVN (35-50 foot wingspan) Rotax 914 (55, 914)</td>
</tr>
<tr>
<td>Fuel type</td>
<td>95 unleaded, 100 LL</td>
<td>95 unleaded, 100 LL</td>
</tr>
<tr>
<td>Fuel capacity</td>
<td>up to 350 litres</td>
<td>up to 350 litres</td>
</tr>
<tr>
<td>Endurance</td>
<td>up to 22 h</td>
<td>up to 26 h (50 foot wings)</td>
</tr>
<tr>
<td>Wing area</td>
<td>9,0 m</td>
<td>10,3 m2</td>
</tr>
<tr>
<td>Length</td>
<td>6,4 m</td>
<td>9,51 m2</td>
</tr>
<tr>
<td>Height</td>
<td>2,0 m</td>
<td>1,85 m</td>
</tr>
<tr>
<td>Cabin width</td>
<td>115 cm</td>
<td>110 cm</td>
</tr>
<tr>
<td>Empty weight</td>
<td>260 kg</td>
<td>280 kg</td>
</tr>
<tr>
<td>Glide ratio</td>
<td>15</td>
<td>15.1 (26.1)</td>
</tr>
<tr>
<td>Sensors installation</td>
<td>excellent baggage compartment</td>
<td>good baggage compartment, under the seat</td>
</tr>
<tr>
<td>Minimum speed IAS</td>
<td>60 km/h/ 32 kts</td>
<td>80 km/h / 32 kts</td>
</tr>
<tr>
<td>Maximum speed IAS</td>
<td>250 km/h/ 131 kts</td>
<td>250 km/h/ 131 kts</td>
</tr>
<tr>
<td>Service ceiling</td>
<td>up to 27 000 ft (turbo)</td>
<td>up to 30 000 ft (turbo)</td>
</tr>
<tr>
<td>Rescue System</td>
<td>Mayday</td>
<td>Galley</td>
</tr>
</tbody>
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Flying safely slower and lower means getting sharper images and a lot more detail.
The company Aerovizija is small, flexible and responsive with 20 years experience in aerial survey. It is focused to the world from above in a fully efficient, environmentally friendly and energy-saving way. **AEROVIZIJA** is driven by the wish to fulfill the customer’s needs with maximum efficiency. Our mission is to establish the best equilibrium between cost and performance to your project’s needs by constantly focusing on the discovery of new hidden and unused talents within our highly creative field engineering staff and scientific advisors.

The company Aerovizija is a general representative for the sale of aeroplanes and marketing of the brand AeroSpool aircraft and represent Pipistrel Surveyor aircraft.

Aerovizija offer full aerial survey package: modified aircraft – flight management system – sensor integration - training

*Digital orthophoto (RGB, NIR, IR, MULTISPECTRAL)*
*Digital terrain model DTM and volume calculation*
*3D modelling of landscape, urban areas…*
*Thermographic analysis with FLIR camera*
*Multispectral analysis with VNIR, SWIR cameras (spectral range 400 – 2500 nm)*
*Full-HD video with live view on flourescent screen*
*Acquisition of airborne data*
*Processing (e.g. geocoding, orthoimage creation)*
*Image processing and analysis*
*Participation in R&D projects*
*Aerial survey flight training*

**RGB/NIR APPLICATIONS**
*Urban planning*, forestry, agriculture, *infrastructure*, *natural protected areas, hydrological studies, aero-archaeology, natural disasters*.

**THERMOGRAPHIC APPLICATIONS**
*Energy-adequacy studies of buildings*, roof & road inspection, *solar panels inspection*, underground hot water system inspection, *water pollution detection, wild animal counting*…

**HYPERSPECTRAL APPLICATIONS**
*Geology: mineral mapping, environmental impact studies*, *Forestry: forest mapping, ecosystem health monitoring*.

**AERIAL SURVEY FLIGHT TRAINING**
*Aerial Vertical Photography can be trained when pilot already has a licence. (UL, PPL, CPL) Introduction course:*
Program which teaches pilots of Aerial Vertical Photography more than just how to take photographs. Pilots are trained to understand the applicability of vertical aerial photography using different cameras and sensors.
*Full scale course:*
Ground and aerial survey training will give pilots theorethical and practical knowledge in order to assure stability and safety during the flight.
We will teach you everything you need to know about Aerial Vertical Photography.
Complete system for vertical aerial imaging

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