



AIRINS

GEOREFERENCING AND ORIENTATION SYSTEM
FOR AIR APPLICATIONS



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GEOREFERENCING AND ORIENTATION SYSTEM

AIRBORNE SENSING AND MAPPING

AIRINS is a lightweight, all-in-one, real-time georeferencing and positioning system designed to meet the requirements of the most demanding airborne survey and remote sensing applications such as digital and film cameras, SAR, hyperspectral, pushbroom sensors and LIDARs.

Designed for easy integration, **AIRINS** combines multiple I/Os and an extensive protocol library to accept all types of GNSS inputs. It handles multi-sensor operations (LIDAR and cameras) thanks to accurate timing, a very fast output rate, event markers and highly accurate position information in real time. **AIRINS** computes high-accuracy position and orientation data up to two hundred times per second.

AIRINS, ALL-IN-ONE GPS/IMU

iXBlue FOG IMU:

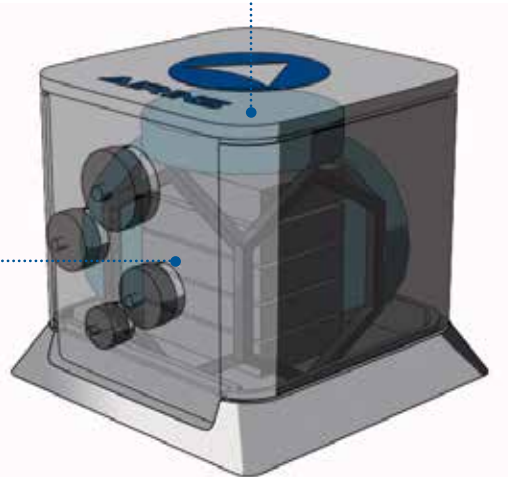
- High grade fiber-optic gyroscope and acceleration sensors
- Absolute accuracy
- Very low noise level
- High relative accuracy (< 1 arc-second)

Embedded data processing:

- Navigation solution
- Relies mostly on IMU sensors rather than aiding GPS
- Fast alignment mode
- Automatic setup and initialization

Comprehensive interface:

- 200 Hz real-time data
- 1 000 Hz event markers
- Precise time-tagging
- Pulses
- Ethernet



AIRINS

ALL-IN-ONE COMPACT SOLUTION

PERFORMANCE*

	GPS	DGPS	RTK	PPK
True heading (deg)	0.02	0.02	0.01	0.005
Roll/pitch (deg)	0.005	0.005	0.005	0.0025
Velocity (m/s)	0.03	0.02	0.01	0.01
Position (m)	5	0.6	0.15	0.15

IMU PERFORMANCE

Drift	< 0.01 °/hr
Noise	< 0.0015 °/sqrt (hr)

DELPHINS POST-PROCESSING SOFTWARE

DELPHINS utilizes forward, backward and smoothing techniques for optimal trajectory computation and increased reliability. It allows seamless integration with sensor data collected in the field. It reduces the amount of offline work and boosts productivity.



Smoothed best estimate trajectory

Sensor orientations

* All figures are RMS
Specifications subject to change without notice

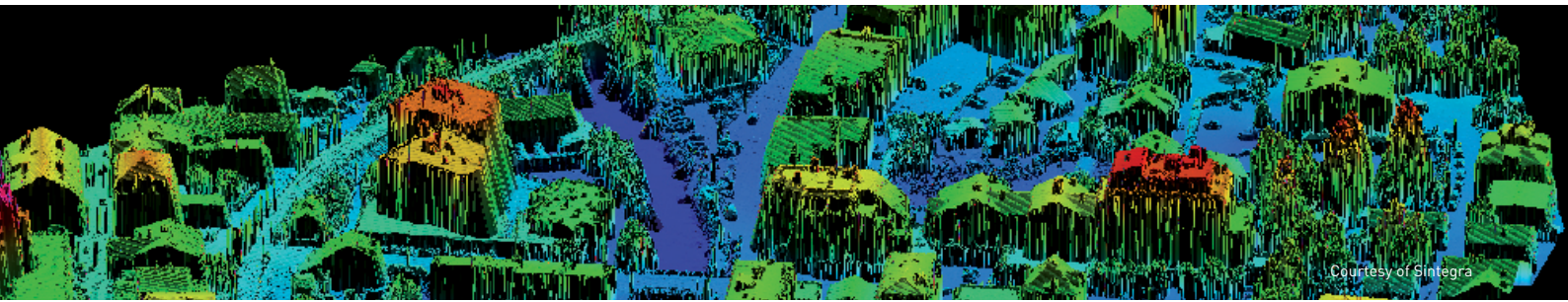
INS CHARACTERISTICS

Weight:	4.5 kg	Operating temperature:	-20°C to 55°C
Size:	180 mm x 180 mm x 160 mm	Storage temperature:	-40°C to 80°C
Power:	consumption: < 18 W input range: 12 to 32V DC	MTBF:	100 000 hours

INS INTERFACES

3 event markers:	100 μ s time stamping accuracy, up to 1 000Hz
Output refreshing rate:	up to 200 Hz
Latency:	< 3 ms
Time tagging:	PPS signal
Ethernet 100 Mbits:	- configuration, monitoring, http access - 5 logical ports
2 serial inputs:	RS232/422
2 serial outputs:	RS232/422
Pulses:	3 in/2 out





AIRINS, designed for optimal integration and ease of use, utilizes **iXBlue**'s expertise in fiber-optic gyroscopes, already in use in satellite control. **AIRINS** combines the latest motion sensing technology, electronics and embedded processing design in one single unit. This offers the most compact position, orientation and direct georeferencing system.

FEATURES

- High accuracy heading, roll and pitch
- No drift in straight line
- Fast alignment
- High banking angles
- No ITAR component
- Industry-ready interface
- Compact, all-in-one
- Direct georeferencing

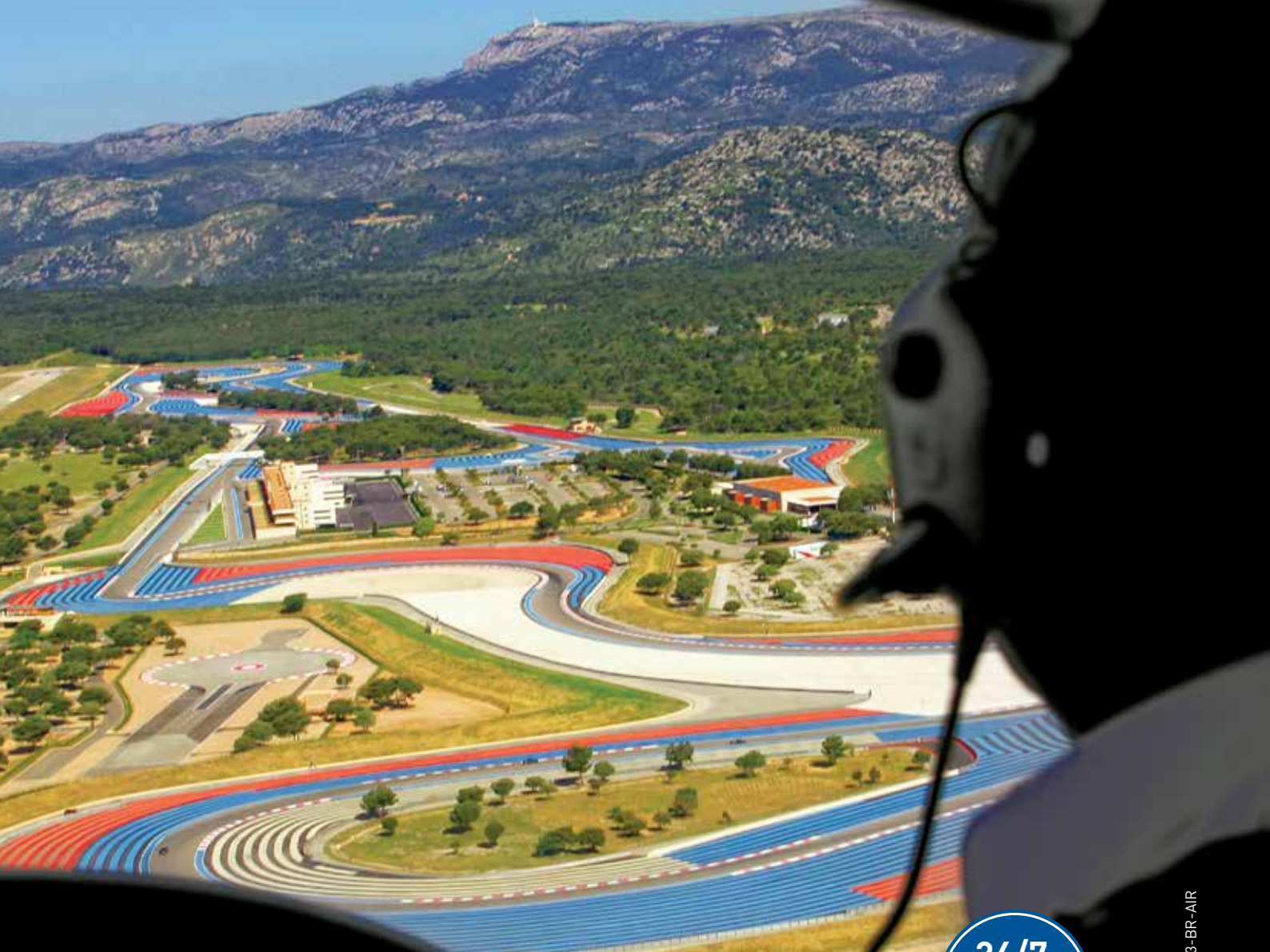
BENEFITS

- Higher altitude survey for extended coverage
- No need to break-off lines
- Optimal flight
- Efficient time-saving operations
- Easy to export
- Easy integration: compatible with standard FMS, mounts, GPS, cameras and lidars
- No external control unit
- Fewer or no ground control points needed



APPLICATIONS:

- Corridor mapping • Sensor gyrostabilization • UAV control and navigation • Forestry • LIDAR • Environmental assessment • SAR imaging
- High altitude remote sensing • Rapid response imaging • Digital camera • Hyperspectral sensors • Urban planning • Film camera
- Coastal zone monitoring • Multisensor survey • DTM generation



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