

iXblue at a glance

30
YEARS OF
EXPERIENCE

140+
MILLION EUROS
OF TURNOVER

80%
OF TURNOVER
ACHIEVED ABROAD

650+
EMPLOYEES

25,000+
FIBER-OPTIC
GYROSCOPES SOLD

20%
OF TURNOVER
REINVESTED
EACH YEAR IN R&D

**Worldwide
presence**
9 SITES IN FRANCE,
12 ABROAD

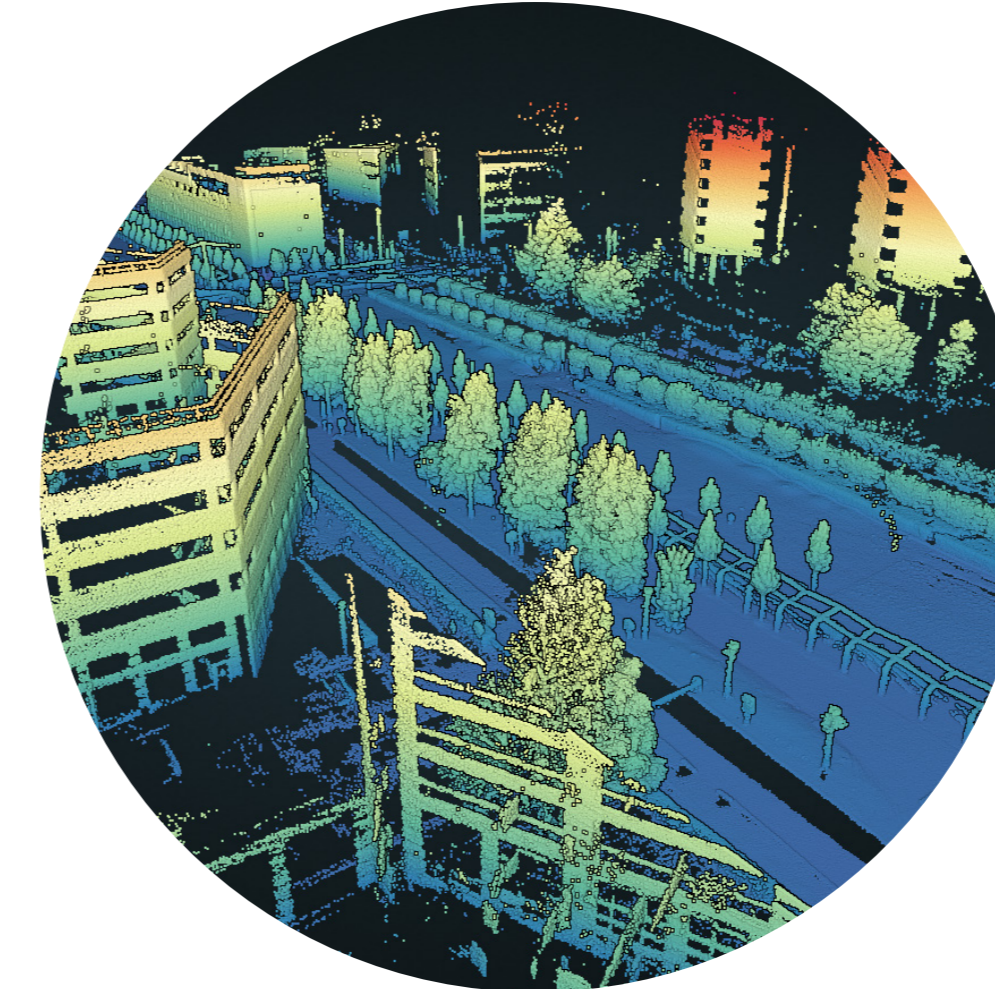
SERVING OVER
500
CUSTOMERS
EVERY YEAR

24/7
TECHNICAL
SUPPORT

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INERTIAL NAVIGATION SYSTEMS
FOR GEOREFERENCING APPLICATIONS

ixblue

HOW TO COMPARE INERTIAL NAVIGATION SYSTEMS (INS)?

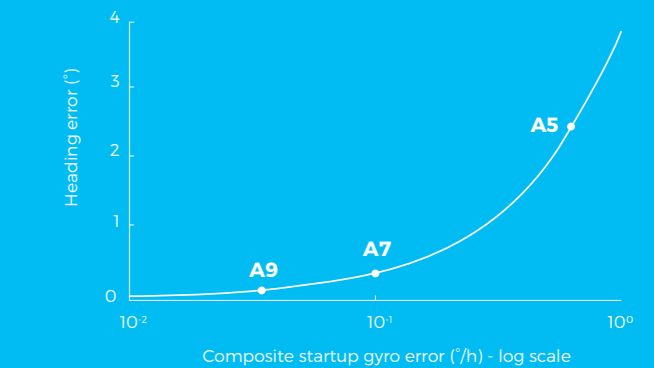
North seeking capability

"North seeking" INS are able to determine the true heading of the system autonomously, without the need for GNSS or movements. To achieve that, the composite gyro bias at startup must be 100 times smaller than the Earth rotation rate (15"/h), which means smaller than 0.1-0.2"/h.

The gyro bias stability being displayed in most data sheets only represents a small portion of the total bias at startup, which is usually 10 to 100 times larger.

Alternatively, when seeking lower performance, magnetometers can be used to provide magnetic heading. However, this is only true in very well controlled environments as the smallest disturbances of the magnetic field can lead to large heading errors.

Heading error depending on gyro composite startup error



Thermal environment

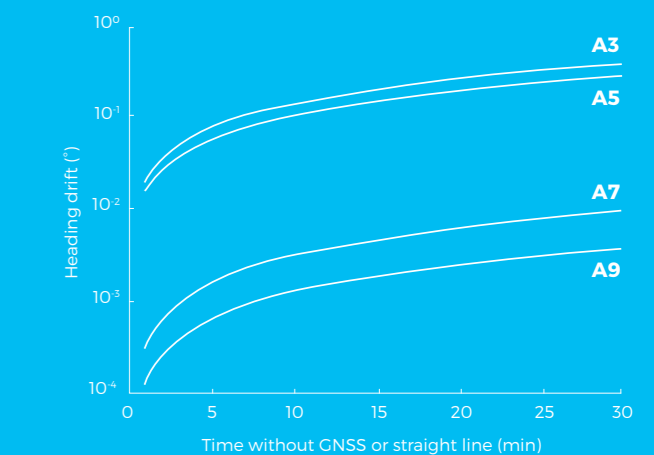
Inertial sensors performance does not only depend on the temperature, but also on its rate of change. This should particularly be monitored for applications requiring a short alignment period, such as drone survey, since the temperature rate of change is usually stronger at startup.

Navigation performance

All INS do perform data fusion between inertial measurements and GNSS position fixes. However, the quality of the system is really shown in two cases:

- In environments where GNSS signal reception is harsh (urban canyons, mountains, trees, etc.), even survey-grade GNSS can provide very poor-quality position fixes (if any). In that case, only a precise INS heading can ensure an accurate position.
- In long straight lines navigation, heading precision will rely solely on the vertical gyro performance, making it the most valuable sensor of the system.

Heading drift in harsh conditions



SCALABLE FOG-BASED INS



Atlas A3

COMPACT AND LIGHTWEIGHT INS

The Atlas A3 is an export-free inertial navigation system providing accurate heading for long distance straight lines. An OEM version is available for UAS applications.



Atlas A5

BEST-IN-CLASS EXPORT-FREE INS

The Atlas A5 is an export-free inertial navigation system. Value driven, it provides Fiber-Optic Gyroscope (FOG) performance to a wider range of applications.



Atlas A7

HIGH-GRADE STANDARD INS

The Atlas A7 is a cost-effective North seeking inertial navigation system. It has been specifically designed for quick and simple installation, as well as "set and forget" operations.



Atlas A9

ULTIMATE INS FOR NICHE APPLICATIONS

The Atlas A9 is the highest performing inertial navigation system currently available on the market. It is suited to airborne and other challenging applications.

Complete mastery of all inertial technologies included within iXblue's products allows the company to offer INS tailored to all applications' specific requirements. GNSS options, as well as OEM versions are available depending on customers' needs.



APPS

ADVANCED POST-PROCESSING SOFTWARE
GNSS+INS SOFTWARE SOLUTION

Apps is a post-processing and batch productivity tool for the iXblue survey INS product range. Powerful data management, visualization, editing features and processing functions, together with data export capability make this tool essential for quick and precise trajectory computation. Apps can incorporate different GNSS-INS post-processing algorithms.

LAND SPECIFICATIONS

	Atlas A3			Atlas A5			Atlas A7			Atlas A9		
CHARACTERISTICS												
North seeking							●			●		
Temperature	From -20°C to +55°C			From -20°C to +55°C			From -20°C to +55°C			From -20°C to +55°C		
Temperature variation	Insensitive to any operational temperature change						Insensitive to any operational temperature change					
Weight	OEM: 450 g			2.6 kg			2.6 kg			4,5 kg		
Dimensions (mm)	OEM: 70.5 x 70.5 x 47.3			160 x 160 x 113			160 x 160 x 113			180 x 180 x 160		
PERFORMANCE WITH GNSS (in RMS)												
Correction type	PPK	RTK	DGPS	PPK	RTK	DGPS	PPK	RTK	DGPS	PPK	RTK	DGPS
Horizontal Position (X,Y) (m)	0.01	0.02	0.30	0.01	0.02	0.30	0.01	0.02	0.30	0.01	0.02	0.30
Vertical Position (Z) (m)	0.01	0.02	0.30	0.01	0.02	0.30	0.01	0.02	0.30	0.01	0.02	0.30
Roll & Pitch (deg)	0.015	0.03	0.05	0.008	0.01	0.01	0.005	0.008	0.008	0.0020	0.0020	0.0025
Heading (single antenna, deg)	0.035	0.05	0.1	0.025	0.04	0.05	0.012	0.015	0.02	0.005	0.008	0.01
Heading (dual antenna, deg)	0.035	0.05	0.1	0.025	0.04	0.05	Available on request			Available on request		
Heading drift 10 min straight line	0.08	0.08	0.08	0.05	0.05	0.05	0.008	0.008	0.008	0.002	0.002	0.002
PERFORMANCE DURING GNSS OUTAGE 1 min (in RMS)												
Correction type	PPK	RTK	DGPS	PPK	RTK	DGPS	PPK	RTK	DGPS	PPK	RTK	DGPS
Horizontal Position (X,Y) (m)	0.40	1.50	1.50	0.15	0.60	0.90	0.08	0.40	0.70	0.04	0.20	0.40
Vertical Position (Z) (m)	0.20	0.50	1.0	0.15	0.60	0.70	0.06	0.40	0.50	0.04	0.20	0.40
Roll & Pitch (deg)	0.03	0.06	0.06	0.008	0.012	0.012	0.005	0.008	0.008	0.0020	0.0020	0.0025
Heading (single antenna, deg)	0.035	0.05	0.1	0.025	0.04	0.05	0.012	0.015	0.02	0.005	0.008	0.01

AIR SPECIFICATIONS

	Atlas A3			Atlas A5			Atlas A7			Atlas A9		
CHARACTERISTICS												
North seeking							●			●		
Temperature	From -20°C to +55°C			From -20°C to +55°C			From -20°C to +55°C			From -20°C to +55°C		
Temperature variation	Insensitive to any operational temperature change						Insensitive to any operational temperature change					
Weight (kg)	OEM: 450 g			2.6 kg			2.6 kg			4,5 kg		
Dimensions (mm)	OEM: 70.5 x 70.5 x 47.3			160 x 160 x 113			160 x 160 x 113			180 x 180 x 160		
PERFORMANCE WITH GNSS (in RMS)												
Correction type	PPK	RTK	DGPS	PPK	RTK	DGPS	PPK	RTK	DGPS	PPK	RTK	DGPS
Horizontal Position (X,Y) (m)	0.01	0.02	0.30	0.01	0.02	0.30	0.01	0.02	0.30	0.01	0.02	0.30
Vertical Position (Z) (m)	0.01	0.02	0.30	0.01	0.02	0.30	0.01	0.02	0.30	0.01	0.02	0.30
Roll & Pitch (deg)	0.015	0.03	0.05	0.008	0.01	0.01	0.005	0.008	0.01	0.0020	0.0020	0.0025
Heading (single antenna, deg)	0.035	0.1	0.15	0.025	0.04	0.05	0.015	0.02	0.03	0.005	0.008	0.01
Heading (dual antenna, deg)	0.035	0.1	0.15	0.025	0.04	0.05	Available on request			Available on request		
Heading drift 10 min straight line	0.08	0.08	0.08	0.03	0.03	0.03	0.008	0.008	0.008	0.002	0.002	0.002
PERFORMANCE DURING GNSS OUTAGE 1 min (in RMS)												
Correction type	PPK	RTK	DGPS	PPK	RTK	DGPS	PPK	RTK	DGPS	PPK	RTK	DGPS
Horizontal Position (X,Y) (m)	0.60	10	15	0.20	1.60	2.70	0.15	1.10	1.80	0.05	0.30	0.60
Vertical Position (Z) (m)	0.10	1	1.50	0.20	1.00	1.50	0.10	0.60	1.00	0.05	0.30	0.60
Roll & Pitch (deg)	0.03	0.15	0.15	0.008	0.012	0.012	0.005	0.009	0.01	0.0020	0.0020	0.0025
Heading (single antenna, deg)	0.035	0.1	0.15	0.025	0.04	0.05	0.015	0.02	0.03	0.005	0.008	0.01

APPLICATIONS

	Atlas A3	Atlas A5	Atlas A7	Atlas A9
TECHNOLOGY	FOG-MEMS	FOG	FOG	FOG
LAND APPLICATIONS				
Asset inventory	●	●		
Pavement condition survey		●	●	
Vehicle automation	●	●		
HD mapping			●	●
Automotive testing	●	●		
Ground-truth			●	●
AIR APPLICATIONS				
Small area survey (UAS)	●			
Wide area survey (plane, helicopter)		●	●	●
Precision pointing			●	●