iXblue at a glance

30 YEARS OF EXPERIENCE

650+ EMPLOYEES

25,000+ FIBER-OPTIC GYROSCOPES SOLD

650 NAVAL PLATFORMS EQUIPPED

SERVING OVER 500 CUSTOMERS EVERY YEAR

140+ MILLION EUROS OF TURNOVER

80% OF TURNOVER ACHIEVED ABROAD

20% OF TURNOVER REINVESTED EACH YEAR IN R&D

24/7 TECHNICAL SUPPORT
iXblue, a global partner in the fields of resilient navigation.

Today, Navies require performant navigation, with or without GNSS, as well as swifter and more accurate positioning. iXblue’s pioneering work on the Fibre-Optic Gyroscope (FOG) technology has revolutionized inertial navigation in the last decade, providing state-of-the-art-performance, low cost of ownership and reliability in harsh environments.

The French company develops, manufactures and integrates all critical FOG components and is therefore able to adapt, produce, export and maintain its Inertial Navigation Systems (INS). With the full control of the value chain, iXblue can design tailored solutions for its customers, stay on the cutting-edge of technology and provide systems that are ITAR-free and subject to French export regulation only.

Benefitting from the FOG technology, iXblue provides the most advanced solutions against GNSS jamming/spoofing threats that can compromise critical naval operations. Distributing a highly accurate and reliable navigation information to all onboard systems, iXblue offers the most resilient information that enables naval forces to conduct undisrupted operations.

Beside these operational requirements, iXblue’ systems meet industrial integrators needs for cost-effective and easy to integrate equipment. They share strong commonalities with regards to hardware, software and interface, resulting in significant savings in terms of integration, installation, configuration, logistics and maintenance costs.
UNRIVALED PERFORMANCE

FIBER-OPTIC
GYROSCOPE TECHNOLOGY (FOG)

Leveraging 30 years of advanced expertise in Fiber-Optic Gyroscopes, iXblue designs and manufactures sea-proven FOG-based Inertial Navigation Systems (INS). This in-house and ITAR-free technology now provides resilient navigation to surface and submarine platforms all over the world. Because iXblue has complete mastery over all the components that are integrated into its systems, the company can push the limits of the FOG technology to have it reach new peaks of performance.

ROBUST AND RESILIENT

FOGs are solid-state systems that do not involve any movement of mechanical parts. Operating as a single component and relying only on light motion, they are highly resistant to external disruptions such as shocks, extreme temperatures, magnetism and vibrations, and operate in extreme environments (submarines, long-range artillery, extreme deep-water vehicles, satellites).

FOGs ensure:
- acoustic stealth
- robustness
- cost-effectiveness
- low cost-of-ownership
- 500,000 MTBF

SEA-PROVEN

Onboard over 40 navies worldwide, iXblue’s FOG is the single technology offering unrivaled performance while being proven at sea. FOG has furthermore become the standard navigation solution for ROVs and AUVs worldwide and now equips over 80% of those subsea vehicles.

SCALABLE

The performance of a FOG can be changed by altering the length and diameter of its coil, making it adaptable to a wide range of performance needs. Thanks to iXblue’s mastery of the technology, high levels of performance can be maintained in reduced size products.
RESILIENT NAVIGATION AT ALL TIMES
From the manufacturing of advanced sensors (AHRS, INS, USBL, FLS) and NDDS (Navigation Data Distribution System) to navigation software (WECDIS and E-navigation add-ons), IXblue covers the full value chain of navigation. By detecting GNSS spoofing and/or jamming, as well as identifying and counteracting potential cybersecurity threats, IXblue products and solutions provide resilient navigation information in all conditions, ensuring comprehensive navigational awareness for faster and more efficient decision making.

Once all the navigation data has been collected by the sensors, it is acquired, analyzed, correlated and distributed to all onboard systems by IXblue’s cyber-secured Netans NDDS, that directly interfaces with the ship’s combat-system and platform management system. To protect Navigation Systems against cyber-attacks, Netans:

- Detects and alerts on sensor data and network stream anomalies
- Implements the latest cyber-security standards

To enhance navigation awareness and crews short-time decision-making, IXblue has developed an advanced e-navigation solution relying on artificial intelligence. This solution can be integrated on all existing bridges.

E-POSITIONING ADD-ON
- Improve navigation resilience in GNSS-denied environments through sensors redundancy (INS/AHRS, echosounders, cameras, radar...)
- Consolidated position displayed into WECDIS

E-VISION ADD-ON
- Intuitive augmented reality representation of key navigation information within environment
- WECDIS system pairing for user objects display in 3D scene
- Display and qualification of detected elements (buoys, AIS, radar information, routes, shallow waters...)
- Obstacle detection and avoidance

IXblue covers the full value chain of navigation.
## INERTIAL NAVIGATION

<table>
<thead>
<tr>
<th></th>
<th>Quadrans</th>
<th>Octans</th>
<th>Phins</th>
<th>Marins M3</th>
<th>Marins M5</th>
<th>Marins M7</th>
<th>Marins M8</th>
<th>Marins M9</th>
<th>Marins M11</th>
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<td><strong>Type</strong></td>
<td>AHRS</td>
<td>AHRS</td>
<td>INS</td>
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<td>INS</td>
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<tr>
<td><strong>Performance</strong></td>
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<tr>
<td>Heading accuracy (seclat RMS)</td>
<td>0.23°</td>
<td>0.1°</td>
<td>0.01°</td>
<td>0.01°</td>
<td>0.01°</td>
<td>0.01°</td>
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<tr>
<td>Roll &amp; Pitch accuracy (RMS)</td>
<td>0.1°</td>
<td>0.01°</td>
<td>0.01°</td>
<td>0.01°</td>
<td>0.01°</td>
<td>0.01°</td>
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</tr>
<tr>
<td>Position accuracy no aiding, without GNSS (TRMS)</td>
<td>N/A</td>
<td>N/A</td>
<td>0.6 NM/h</td>
<td>1 NM/12h</td>
<td>1 NM/24h</td>
<td>1 NM/72h</td>
<td>1 NM/96h</td>
<td>1 NM/120h</td>
<td>1 NM/360h</td>
</tr>
</tbody>
</table>

### Certification

- **IMO/IMO HSC**  
  - ● Quadrans  
  - ● Octans  
  - ● Phins  
  - ● Marins M3  
  - ● Marins M5  
  - ● Marins M7  
  - ● Marins M8  
  - ● Marins M9  
  - ● Marins M11

- **MIL STD 810/461**  
  - ● Quadrans  
  - ● Octans  
  - ● Phins  
  - ● Marins M3  
  - ● Marins M5  
  - ● Marins M7  
  - ● Marins M8  
  - ● Marins M9  
  - ● Marins M11
OVER 40 NAVIES AROUND THE WORLD