Since the beginning of the 2000s, iXblue products and solutions have been largely used by many railway companies for tracks mapping and data georeferencing. Thanks to its navigation expertise, iXblue now offers a cost-efficient, high-performance real-time localization solution. It is user-friendly and compliant to railway standards. Our high-performance Atlans R7 inertial navigation directly answers railway operators. It provides undisrupted data, in all environments including when GNSS signals are disturbed or non-existent.

**iXblue at a glance**
- YEARS OF EXPERIENCE
- YEARS OF MOBILE MAPPING SYSTEMS
- TECHNICAL SUPPORT
- 750+ EMPLOYEES
- 30 10+ 24/7 SUPPORT
- 4+ OPERATIONAL TRAINS EQUIPPED
- 150+ MILLION EUROS OF TURNOVER
- 25 000+ FIBER-OPTIC GYROSCOPES SOLD
- 100 000+ KM TRAVELED
- ERTMS LOC4RAIL PROJECT LEADER

**Specifications**

**ATLANS R7**

**Rack dimensions according to F61-005**

3U x 21T x 320 mm

**Overall dimensions**

132.6 mm height x 483 mm width x 399 mm depth

**Weight**

15 kg

**Mechanical Interfaces**

4G/LTE*

1 x 4G/LTE interface on rear panel - Type N receptacle

**Odometer input**

1 x odometer input on rear panel - Free-floating blind mate connector

**Ethernet port output**

1 x PPS output on rear panel - X-coded M12 receptacle

* 4G/LTE for Atlans R7 full configuration (optional)

**Performance**

**Position**

Sampling rate: Up to 200Hz

**Along track accuracy in high density urban environment, with SBAS GNSS outages over 20 mn**

<5m 95% of measurements

95% of measurements <0.05 m/s

Fully compliant to Subset-41, regardless of speed

**Heading** 0.03 | Roll & Pitch 0.015

**Max along track accuracy without GNSS**

<0.1% DT

<0.005 m/s per 100m DT

**Heading** 0.03 | Roll & Pitch 0.015

*No map coupling implementation | **From track records on all Paris Suburb Regional Line C

**Real-time localization inertial solution**
Since the beginning of the 2000s, iXblue products and solutions have been largely used by many railway companies for tracks mapping and data georeferencing.

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**ixblue at a glance**

**YEARS OF EXPERIENCE**
30

**YEARS OF MOBILE MAPPING SYSTEMS EXPERIENCE**
25,000+

**TECHNICAL SUPPORT**
4+

**OPERATIONAL TRAINS EQUIPPED**
100,000+

**FIBER-OPTIC GYROSCOPES SOLD**
150+

**MILLION EUROS OF TURNOVER**
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**ERTMS LOC4RAIL PROJECT LEADER**

**24/7 TECHNICAL SUPPORT**

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**Performance**

- **Position**
  - Sampling rate: Up to 200Hz
  - Along track accuracy in high density urban environment: <5m 95% of measurements
  - With SBAS GNSS outages over 20 mn**

- **Speed**
  - Sampling rate: Up to 200Hz
  - <0.05 m/s 95% of measurements

- **Attitude**
  - Sampling rate: Up to 200Hz
  - Heading: 0.03
  - Roll & Pitch: 0.015

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- **Max along track accuracy without GNSS**
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- **Heading**: 0.03
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**Real-time localization inertial solution**
Pioneering solutions for train localization and metrology

Since the beginning of the 2000s, iXblue products and solutions have been largely used by many railway companies for tracks mapping and data georeferencing.

Thanks to its navigation expertise, iXblue now offers a cost-efficient, high-performance real time localization solution. It is user-friendly and compliant to railway standards. Our high-performance Atlans R7 inertial navigation directly answers railway operators. It provides undisrupted data, in all environments including when GNSS signals are disturbed or non-existent.
HIGH RATE AND ACCURATE GEOLOCALIZATION DATA

Atlans R7 is a turnkey equipment that gives an edge to railway stakeholders by improving traffic management, railway operations, and all onboard geoservices. It provides real-time and continuous georeferenced position, speed and attitudes of the train. It delivers unrivaled and demonstrated performance better than 5m over 95% of the traveled distance along track without GNSS.
**BEST-IN-CLASS PERFORMANCE**

**UNRIVALED REAL-TIME ACCURACY ANYTIME, ANYWHERE**

Atlans R7 delivers pinpoint geolocalization and highly accurate speed information, even in GNSS denied environments (tunnels, woods, urban canyons...). In areas with proper GNSS coverage, iXblue’s Train Model Engine ensures unrivaled accuracy.

It delivers the highest performance in the market:
- Track selective
- Better than 5m over 95% of the traveled distance along track without GNSS.
- Better than 0.05% of traveled distance

**UNMATCHED VALUE FOR MONEY**

Atlans R7 is the most cost-effective solution on the market and is maintenance-free.

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**GNSS disturbed**

**Good GNSS reception**

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**No GNSS reception**

Atlans R7 takes over

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**Atlas R7 trajectory**

**GNSS trajectory**

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**Atlas R7 INS for train localization**
**FIBER-OPTIC GYROSCOPE TECHNOLOGY**

Atlans R7 is based on solid-state fiber-optic gyroscope (FOG) technology. It is the result of more than 30 years of research and development and is today considered to be the best gyroscope in the world. Solid-state, the FOG technology does not involve any movement of mechanical parts causing dithers, vibrations, frictions and resulting in parts’ weariness and noise. This ensures many benefits for the user: robustness of the system (Power-on and Forget), cost-effectiveness and the lowest cost-of-ownership on the market.

**AN EXTENSIVE TRACKRECORD**

Atlans R7 is already equipping several French trains, ranging from fast trains (TGV) to suburban trains (RER), and boasts a massive trackrecord of over 100,000km of analyzed trajectories.

**KEY PARTNER OF ERTMS PROGRAMS**

iXblue is the project leader of LOC4RAIL ERTMS program for a safe and precise localisation solution. The disruptive and innovative safe architecture led by inertial technology proposed by iXblue benefits directly to European operators and can be quickly proposed to the ERTMS market, or CBTC tracking subsystems.
COVERING A WIDE RANGE OF RAIL APPLICATIONS

TRAIN LOCALIZATION

Replacing the localization infrastructures from the tracks with systems directly onboard trains present several crucial advantages in terms of costs and efficiency. This comes with a number of challenges too. Atlans R7 directly answers them by providing undisrupted localization in all environments, no matter the strength of the GNSS signal. It effectively replaces the old, physical balises by innovative, virtual ones.

Another key advantage of trusting iXblue’s solution for localization is the gyro-compassing capability, which does not require any train movement for initialization.

iXblue’s expertise in navigation data fusion (GNSS, INS, cartography) has already helped many customers for their trials.

METROLOGY

As applications requiring track geometry measurements increase, so does the need for accurate and reliable data for images positioning and georeferencing. Atlans R7 directly answers this need.

Atlans R7 provides undisrupted georeferencing position, speed and attitude, making it a key solution for 2D network mapping applications.
SOLUTIONS FOR RAIL APPLICATIONS

Pioneering solutions for train localization and metrology

Since the beginning of the 2000s, iXblue products and solutions have been largely used by many railway companies for tracks mapping and data georeferencing.

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### ATLANS R7
Real-time localization inertial solution

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**Performance***

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*No map coupling implementation | **From track records on all Paris Suburb Regional Line C

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**Interfaces**

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**www.ixblue.com**