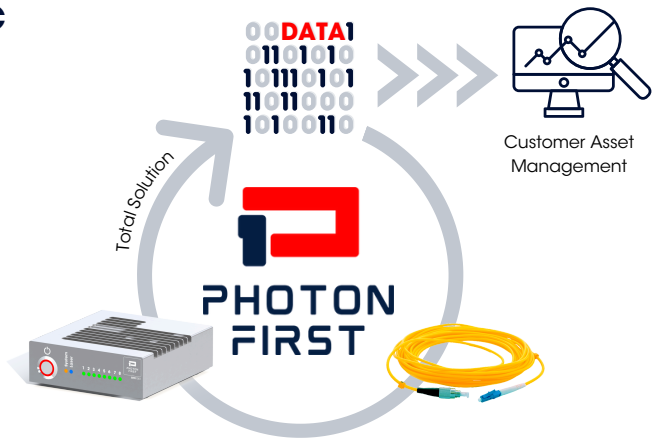
PHOTONFIRST

Looking for Advanced Rail and Rolling Stock Monitoring Technology?

Traditional monitoring technologies often face challenges in the demanding railway environment. Whether dealing with harsh environmental conditions, vibrations, electromagnetic compatibility (EMC) constraints, or the imperative for cost competitive solutions, conventional systems may not meet your needs.

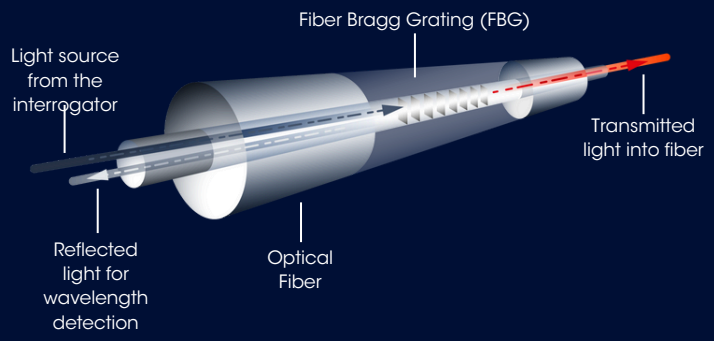
Introducing the Solution: Fiber Optic Sensing (FOS)

At PhotonFirst we develop Fiber Optic Sensing Solutions for complex measurement challenges. Our experience originates from 18 years working with this technology, engineering innovative solutions for various applications. We provide a service that includes the development of technical concepts and prototypes, all the way through to the delivery of industrialized solutions at scale.



The Optical Fiber Becomes The Sensor With FBG-based Technology

PhotonFirst interrogators send light into a fiber and capture it with sensors that reflect the light like a mirror. The light subsequently comes back and the change between the light sent out and the reflected light is translated into a value of measurement, such as temperature, strain, pressure or shape. This is done with the help of the photonics integrated chip (PIC).



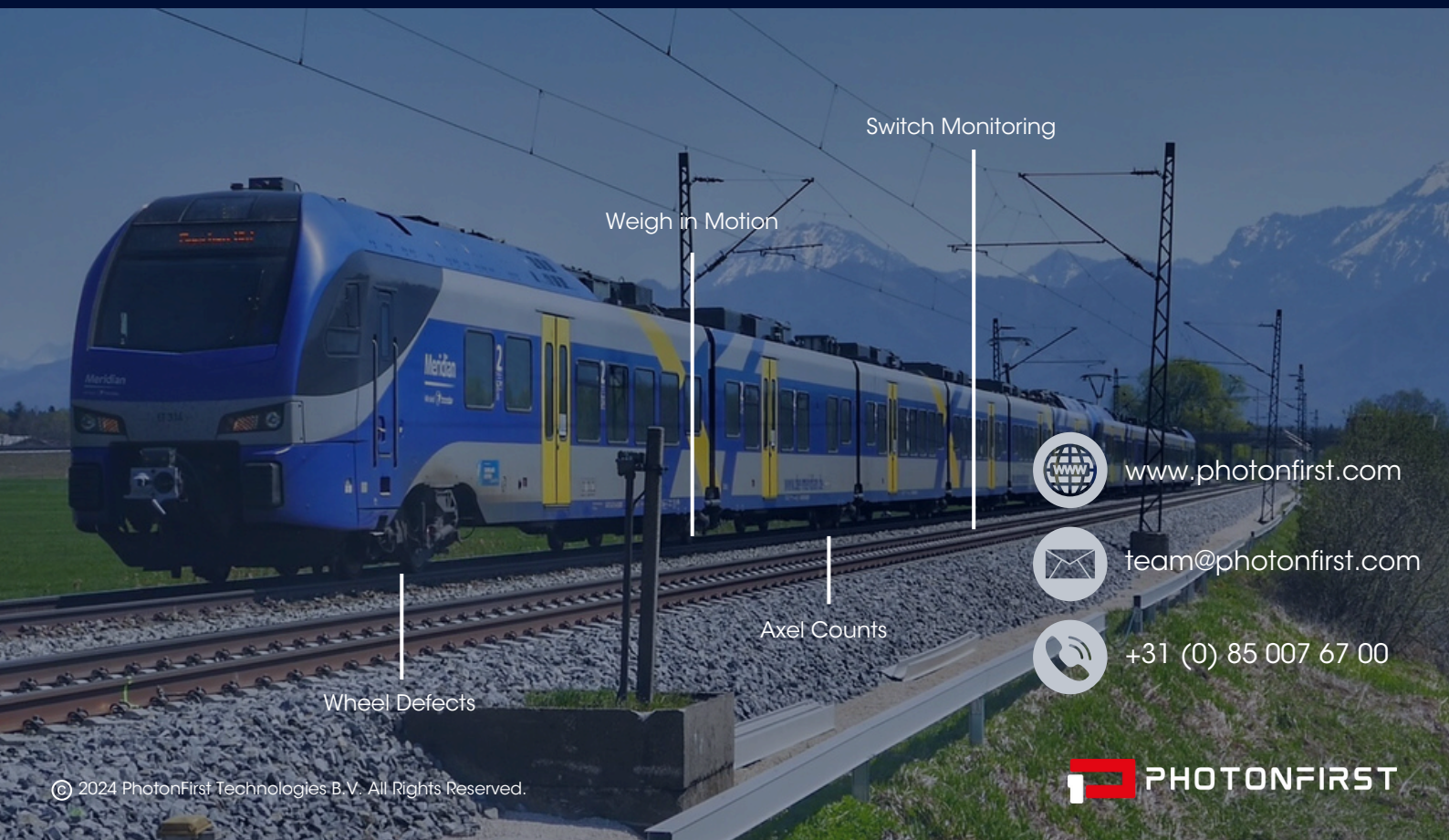
Key Advantages of FBG Technology in Railway Applications

Data Quality
FBG sensors often offer a higher resolution and can operate over a wider strain range and temperature making them more sensitive to small changes. Additionally FBG sensor are less susceptible to noise from environmental factor improving the data quality.

Remote Sensing Capabilities
The optical nature allows FBG sensors to transmit data over long distances without loss of signal integrity, unlike electrical sensors that can suffer from signal degradation and electromagnetic interference.

Cost-Effectiveness (PIC based)
Using Photonic Integrated Circuit (PIC) technology, the cost of these systems has significantly decreased over the years and will continue to decrease due to further chip integrations.

Proven Track Record
PhotonFirst has experience in successfully applying FBG sensor technology on railway infrastructure, and other high demanding markets such as aerospace and the process industry.



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