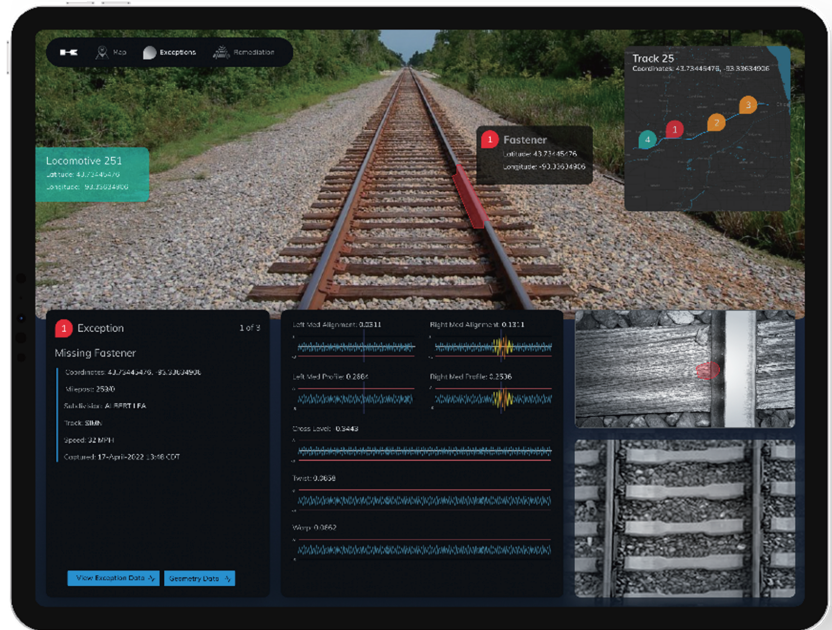![efTIP logo]

# Predictive Track Maintenance Platform



## Enhancing the Safety and Reliability of Your Rail Network While Decreasing Track Inspection Costs

Railroads are under constant pressure to ensure safety across vast amounts of track, while also decreasing track maintenance costs. As a result, their teams need to execute quality inspections and maintenance while minimizing time on track.

## Improve Safety, Optimize Maintenance Costs and Increase Track Availability

We help Track Maintenance and Capital Planning teams save time and money by prioritizing need and generating maintenance plans. Combining all track monitoring data along with software solutions that analyze and predict maintenance needs as well as offer services to execute the work.

## Streamline Your Track Maintenance Operations and Expenditure

**Improve Safety**

Prioritized track inspection data decreases boots on ballast and helps minimize rail incidents

**Optimize Track Maintenance Costs**

Focused and well-organized track maintenance plans reduce capital costs.

**Reliable and Accurate Data**

Comprehensive track monitoring data empowers your team's decision making.

**Increase Track Availability**

Less track time spent on maintenance, more track time for revenue-driving cars.

" "

### Kawasaki Begins Testing of Autonomous Track Geometry Monitoring System with BNSF Railway — July 2023

Kawasaki is excited to announce the start of testing with BNSF Railway. BNSF will be utilizing Kawasaki's sensors and cameras to provide near real-time track geometry data for BNSF to utilize for track maintenance planning. Kawasaki began field testing of the system in 2018 and production units have been in service since 2021 with over 500,000 miles of geometry data provided to railroads.

# Autonomous Track Condition Monitoring System

## Locomotive Mounted

## Easily Installed, Highly Reliable, with Minimal Maintenance Required

Kawasaki's autonomous track condition monitoring system is mounted securely on a locomotive or passenger car, collecting crucial track health data during normal service operations.
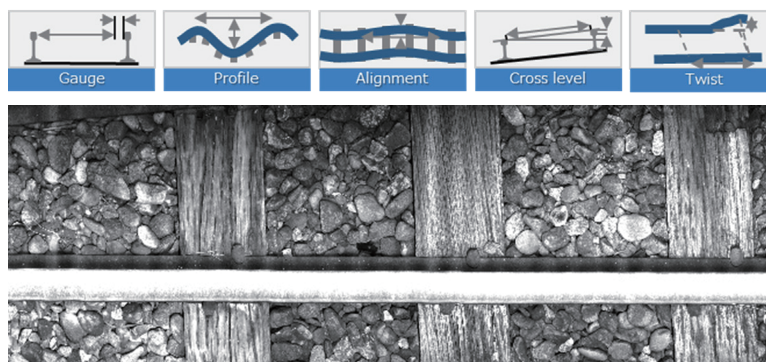
| Gauge | Profile | Alignment | Cross level | Twist |

**Track Geometry**
: Gauge, Profile, Alignment, Cross-level , Twist

**Track Component**
: Fastener, Ballast, Tie, Joint Bar, etc.

## Sensor to Platform Connection

**Hardware Sensors** → Data Transfer → **Data Services** → AI/ML → **Predictive Maintenance Platform**

Measure and analyze parameters of tracks

Track defect data feeds into your Data Warehouse/ Operational Systems

Anticipate maintenance needs and resource allocation

**Sensor Offering**

**Sensor + Platform Offering**