Wabtec CORPORATION

Wayside condition monitoring of rolling stock for optimised operation

Condition monitoring systems

Specialist of wayside condition monitoring

Based on over 25 years of experience in Condition Monitoring, our detailed understanding of the rail industry enables Track IQ to provide a robust technical and commercial offering that adds value to our customers business. With continuous investment in both organic growth and acquisition, Track IQ continue to develop sustainable solutions targeted to meet the challenges of operating an efficient modern railway.

Track IQ has a global reputation for being specialist manufacturers, suppliers and maintainers of wayside condition monitoring equipment and data management systems to the rail industry.

Track IQ's rolling stock condition monitoring products include our Bogie Geometry Monitor (BGM), Bearing Acoustic Monitor (RailBAM), Wheel Condition Monitor (WCM) and our suite of vision based systems to monitor and inspect wheel profile and surface condition, bogie components, brakes, wagon sides, undercarriage and couplers.

These complimentary systems provide a holistic view of rolling stock and their relative health and safety. The powerful and customisable FleetONE database and visualisation tool presents, prioritises, alarms and reports to meet each customer's specific requirements, driving down the cost of rolling stock maintenance, whilst increasing safety.

Country with systems installed

Australia
Belgium
Brazil
Canada
China
France
India
Ireland
Mexico
New Zealand
Norway
Russia
South Africa
Thailand
UAE
United Kingdom
United States

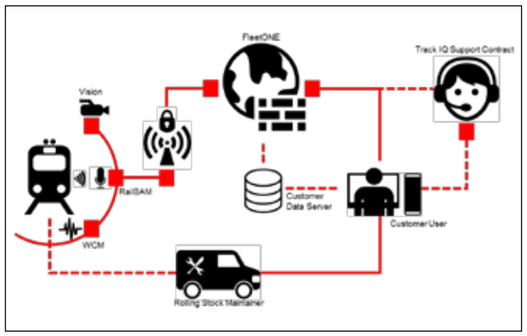
Office locations

Adelaide & Perth, Australia
South Carolina, USA
Burton-on-Trent, England
New Delhi, India

Over 120 sites operational in 17 countries across 6 continents.

FleetONE

IMPORTS, AGGREGATES & UNIFIES WAYSIDE ROLLING STOCK DATA



DESCRIPTION

An advanced data management system that integrates condition monitoring data from a range of wayside and on-board measurement devices

OPERATING PARAMETERS

- Database system, with access via FleetONE web application
- Installed on your premises, or option to host at Track IQ data centre or in a Cloud based solution

APPLICATIONS

- Easy to use, single point access for all data produced by the above systems
- Integrates data from other vendors of wayside and on-board systems
- Generates immediate alerts and scheduled reports
- All alert and report settings customisable via web interface
- Auto generates work orders in the maintenance management system (CMMS)
- All data, alerts and reports can be automatically exported to 3rd party systems

USER BENEFITS

- Simplification: Rather than multiple applications to view data, FleetONE provides a single web page to work with a wide range of equipment
- Automation: Once configured, reports listing bad/damaged components are generated automatically and delivered via email
- Information: The database and search engine are "open" enabling investigation into data and direct access to data as required

RailBAM
BEARING ACOUSTIC MONITOR

DESCRIPTION
Wayside acoustic axle journal bearing monitor to capture all passing wheelsets.

Efficiently integrated with the infrastructure to offer a cost effective to unreliable on-train alternatives

OPERATING PARAMETERS
- Speed: 20-130km/h (13-80mph)
- Capacity: unlimited train length
- Temp: -40/+60°C (-40/140°F)
- Installation location: Mainline or depot
- Detection target: Freight, Passenger and High Speed Trains

APPLICATIONS
- Detection of rolling surface defects in the axle journal bearing
- Providing alerts of defects up to 100,000km before traditional methods of detection

USER BENEFITS
- Predictive alerts allow maintenance to be scheduled without impacting on asset availability
- Reducing in-service failures
- Improved safety through detection and removal of defective material in advance of catastrophic failure
- Bearing health monitoring enables bearing life extension

RailBAM IB
IN-BOARD BEARING MONITOR

DESCRIPTION
Acoustic bearing monitor sitting within the track to capture axle journal bearings as well as bearings in the driveline, suspension tubes, final drive, gearbox, etc.

Efficiently integrated with the infrastructure to offer a cost effective alternative to unreliable on-train solutions.

OPERATING PARAMETERS
- Speed: 20-70km/h (13-45mph)
- Capacity: unlimited train length
- Temp: -40/+60°C (-40/140°F)
- Installation location: Mainline or depot
- Detection target: Freight, Passenger and High Speed Trains

APPLICATIONS
- Detection of defects of in-board axle journal bearings
- Detection of rolling surface defects in bearing components on the underframe

USER BENEFITS
- Predictive alerts allow maintenance to be scheduled without impacting on asset availability
- Reducing in-service failures
- Improved safety through detection and removal of defective material in advance of catastrophic failure
- Bearing health monitoring enables bearing life extension

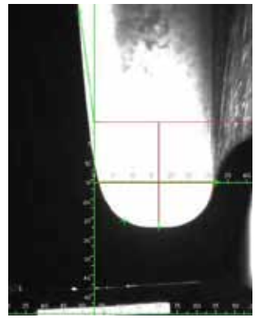
WPM
WHEEL PROFILE MONITOR

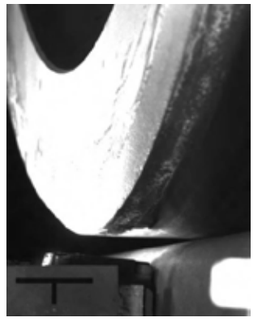
DESCRIPTION
Wayside machine vision based wheel profile measurement system with high accuracy

OPERATING PARAMETERS
- Speed: 10-160km/h (6-99mph)
- Capacity: unlimited train length
- Temp: -40/+60°C (-40/140°F)
- Installation location: Mainline or depot
- Detection target: Freight, Passenger and High Speed Trains

APPLICATIONS
- Flange Height = +/-0.5 mm
- Flange Width = +/-0.5 mm
- Hollow = +/-0.5 mm
- Diameter = +/-1.5 mm
- Back to back = +/-1.0 mm
- Rim = +/-1.0 mm

USER BENEFITS
- Machine vision based to offer all wheel profile related measurements with high accuracy
- Derailment prevention and enables conditioned based maintenance
- Advanced triggering method to minimise power consumption
- Easy system validation and calibration





BIM
BRAKE INSPECTION MONITOR

DESCRIPTION
Wayside vision based system for brake pad/shoe inspection

OPERATING PARAMETERS
- Speed: 10-160km/h (6-99mph)
- Capacity: unlimited train length
- Temp: -40/+60°C (-40/140°F)
- Installation location: Mainline or depot
- Detection target: Freight, Passenger and High Speed Trains

APPLICATIONS
- Brake Shoe/Pad Detection
- Brake Shoe/Pad Thickness Measurement: ± 2 mm
- Securing Key Detection
- Other critical defect of brakes

USER BENEFITS
- Enable predictive based just on-time maintenance of brakes
- Increase rolling stock availability
- Cost reduction on maintenance labour and material
- Forecast the maintenance interval based on historical data

FVIS
FULL VEHICLE INSPECTION SYSTEM

DESCRIPTION
Wayside vision based system(s) to fully inspect vehicle condition including critical parts such as couplers and draft-pack (can be provided as individual modules or integrated system)

OPERATING PARAMETERS
- Speed: 10-160km/h (6-99mph)
- Capacity: unlimited train length
- Temp: -40/+60°C (-40/140°F)
- Installation location: Mainline or depot
- Detection target: Freight, Passenger and High Speed Trains

APPLICATIONS
- Bogie/Vehicle side view module
- Vehicle under carriage view module
- Vehicle top view module (RailCAM)
- Coupler inspection module
- Draft-Pack inspection module
- Tag detection module (PhotoTag)
- Missing components detection such as springs and bolts

USER BENEFITS
- Full vehicle inspection suite composed of separable inspection modules/products
- Customer can have full suite or individual modules depends on specific needs
- Advanced triggering method to minimise power consumption

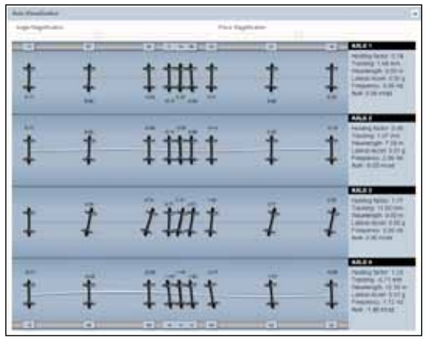
BGM
BOGIE GEOMETRY MONITOR

DESCRIPTION
Wayside system for bogie geometry inspection and tracking problem detection

OPERATING PARAMETERS
- Speed: 10-160km/h (6-99mph)
- Capacity: unlimited train length
- Temp: -40/+60°C (-40/140°F)
- Installation location: Mainline or depot
- Detection target: Freight, Passenger and High Speed Trains

APPLICATIONS
- Hunting detection
- Angle of Attack (AOA) measurement
- Tracking position measurement

USER BENEFITS
- Derailment prevention
- Minimise fuel consumption and therefore enable great cost saving
- Enable comfortability for passenger and HS trains
- Cost effective by using non-laser based technology



WCM
WHEEL CONDITION MONITOR

DESCRIPTION
Wayside combined Weigh in Motion (WIM), Wheel Impact Load Detection (WILD) and vision systems (Wheel Surface Monitor – WSM) for wheel surface condition monitoring

OPERATING PARAMETERS
- Speed: 10-160km/h (6-99mph)
- Capacity: unlimited train length
- Temp: -40/+60°C (-40/140°F)
- Installation location: Mainline or depot
- Detection target: Freight, Passenger and High Speed Trains

APPLICATIONS
- Wheel impact detection
- Weight measurement at different levels
- Reporting overloading at different levels
- Vehicle end-to-end (ETE) and side-to-side (STS) imbalance
- Detection and reporting of poor wheel load distribution
- Detailed surface defect detection via imaging systems (optional)

USER BENEFITS
- Alert on tread defects and loading problem enables customer to address issues faster and optimise bogie maintenance, minimising impact on infrastructure and rolling stock
- Wheel life optimisation
- Improved safety through alerting of problem events
- Optional image sensor enables accurate defect identification

TNM
TRAIN NOISE MONITOR

DESCRIPTION
Wayside acoustic and vison based system to record and document noisy events/trains

OPERATING PARAMETERS
- Speed: N/A
- Capacity: Unlimited train length
- Temperature: -40/+60°C (-40/140°F)

APPLICATIONS
- Passive monitoring of environmental noise pollution
- Link noise levels to vehicle identity
- Active system, controlling infrastructure based friction modifier in response to noise emissions

USER BENEFITS
- Providing customers with sound emission logs and images associated with passing rolling stock. Ensures environmental noise limits are adhered to
- Optimising the use of costly friction modifiers when applied ‘on condition’ in response to threshold exceedances

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