# MGCX Solutions

# WIMWIM system

## WEIGH IN MOTION WHEEL IMPACT MONITOR

### INTRODUCTION

High Impact loads could lead to breaks in the rail system. Delayed customer payloads, unproductive track time, and secondary damage of equipment and track, increase costs dramatically.
In a worse case scenario, broken components can lead to derailment.

The WIMWIM comprises a wheel impact monitor, a weigh-in-motion system and skew bogie detection system. With WIMIM problems and faults are indicated before major damage or expenses can occur.

### HOW IT WORKS

The system comprises multiple measuring cells constructed with strain gauges configured to measure vertical loads. The number of measuring cells depends on specific rolling stock wheel sizes. Signal processing algorithms are used to determine wheel defects.

Skew bogies are identified by the measurement of the lateral forces induced to the rail. Strain gauges applied to the web of the rail in a special configuration to measure pure lateral forces independent of vertical influences.

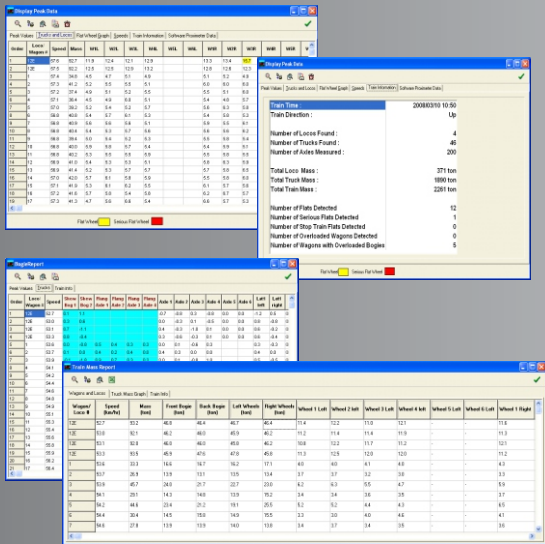Mass measurements use the same strain gauges as used for wheel impact determination.

WHEEL IMPACT

WHEEL IMPACTS
COALLINE - OCTOBER 1996

Original Signal    Filtered signal

# MGCX Solutions
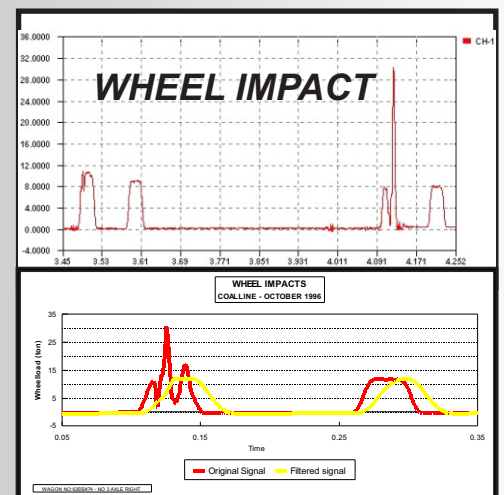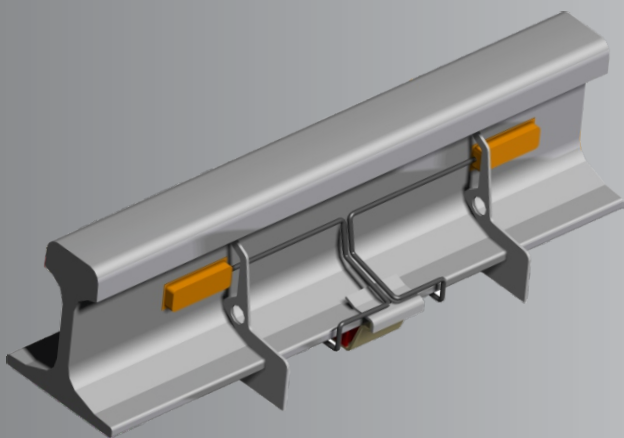
# WIMWIM system

## WEIGH IN MOTION WHEEL IMPACT MONITOR

## FEATURES OF WIMWIM

Detect shelling, spalling and skid wheels
Detect skew and flanging bogies
Detect unsymmetrical or overloading of wagons
Measure dynamics up to 70 tons per wheel and up to 20kHz per sensor
Locomotive recognition within any part of the train
Covers bi-directional traffic including high speed trains
Speed determination of each vehicle
Results available on the system for all traffic measured
Train database with accumulated statistics
Exception report can be transmitted to user specified locations
Bi-directional communication to enable software and file updates
Optional integration of vehicle tag number with WIMWIM System
Industry standard hardware makes WIMWIM easy to deploy
Proven track record with many sites