WEIGHSIDE INTELLIGENT LONGSTRESS MANAGEMENT

WILMA system

INTRODUCTION

Throughout the world Continuous Welded Rail (CWR) has revolutionised rail technology. CWR is preferred on lines with high speed, high axle loads or high traffic density.

One of the disadvantages of CWR, however, is the generation of temperature induced rail stresses. In fact, on a typical heavy haul line where CWR is used, up to 60% of all train delays can be attributed to over stressing of the track infrastructure.

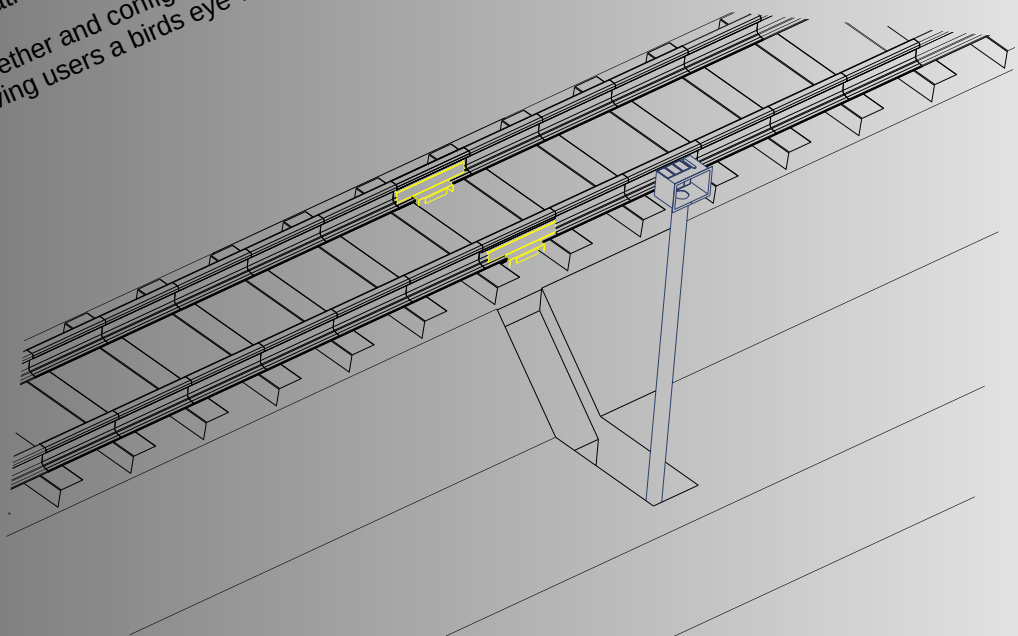
For this reason, the WILMA (Wayside Intelligent Long-stress Management) measurement system has been developed. The aim of the system is to measure rail stress and temperature, thereby creating real time warnings of possible rail breaks and kick-outs. This enables maintenance engineers to de-stress the track regularly, ensuring a stress free and safe track infrastructure.

HOW IT WORKS

The system comprises four main elements namely:

- The field monitoring stations at carefully selected stress points along the track
- The data amplifier acquisition & transfer modules
- A central server capable of receiving and storing the data
- The software responsible for reducing and presenting the data and stress information

When brought together and configured, these elements form the WILMA system giving users a birds eye view of the track infrastructure.



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FEATURES OF WILMA

- Realtime calculation of stress & temperature of rail
- Monthly maintenance advisor including guidelines for de-stressing
- Condition reports
- Realtime alarm warnings to central control room
- Forcasting tool
- Historical data plots depicting long term stress behaviours
- Status of all measurement stations
- Intelligent maintenance
- Assist in derailment prevention
- System expandability
- **System applicaple to a broad range of users including:-**
- Coal link operations centre
- Maintenance managers
- Depot Engineers and Technicians
- Production Managers
- Technology Management (TTC)
- Viewers that will access data on the main server
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