

WHY TRACK CONDITION MONITORING

Railways is a critical industry which forms the backbone of the country. It is a maintenance intensive and time constrained environment where constant monitoring and timely upkeep is mandatory to keep the trains running on-time and safely.

The key focus of the maintenance teams is to maintain Safety and Passenger Comfort, no matter what. The time window available for maintenance is rather small (a few hours). Currently data is captured using special maintenance carriages that collect and collate data onto a centralized location. Each sector is monitored periodically (mostly scheduled monthly). This data is then distributed to the various locations for their interpretation and action. The time between the data collection and distribution is between a few weeks to a month, effectively making the time between each observation 30-60 days old.

What happens if there is a possible failure in this period?

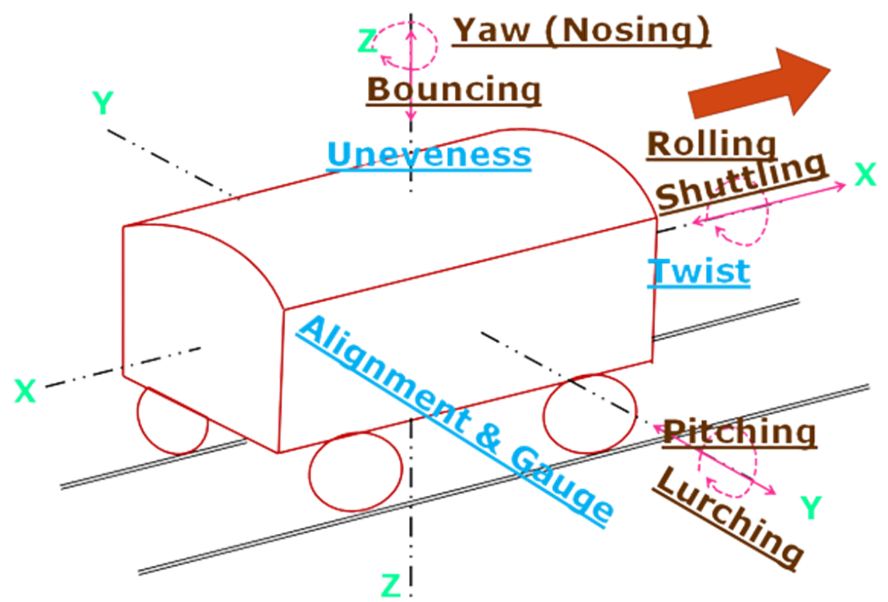
OUR SOLUTION - PREDACT RAIL

TRACK CONDITION MONITORING AND FAILURE FORECASTING

PredAct RAIL is a specialized application extension of our SM4.0 platform to monitor the condition of railway tracks and predict possible failures, when and where they will occur, well in advance. This intelligence gives the maintenance teams adequate time to rectify the defects, thereby ensuring the safety of the passengers and avoiding costly down-time.

Our compact bundle of sensors are placed onto the rail carriage and the data is continuously collected to our databases for real-time monitoring and analysis.

PredAct RAIL uses (where required) Vibration analysis and Current Signature in conjunction, to increase accuracy and decrease false positives arising out of a single source.



VALUE PROPOSITION

- Forecast the exact geographical location of the anomaly
- Forecast the magnitude of the anomaly via Dashboard, SMS, Email etc.,
- Pro-active signaling of anomalies
- Reduces probabilistic down-time
- Reduces reactive maintenance costs (post incident events like track repair, track replacement etc.,)
- Intuitive, real-time dashboards, with extensive slice / dice of data to effectively narrow down to the exact area of interest.



APPLICATION AREAS

- Railway tracks
- Coasters
- Dry docking rails
- Mining cart lines

CURRENT STATUS

- Chennai Metro Rail Ltd (CMRL) has expressed interest to act as our domain expert to provide us valuable labelled data and in implementing PredAct RAIL to monitor the condition on their existing track length of about 70 Kms
- Have had meetings with Southern Railways, to monitor the condition of tracks and forecast degradation of Ride Quality Index.

