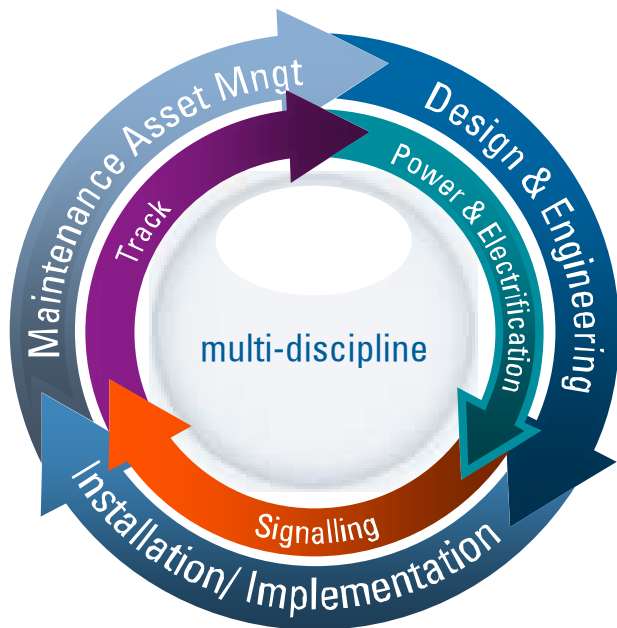


Balfour Beatty Rail
Condition Monitoring Technologies

24 September 2010

Innotrans Dialog Forum – New Paths in Rail Servicing

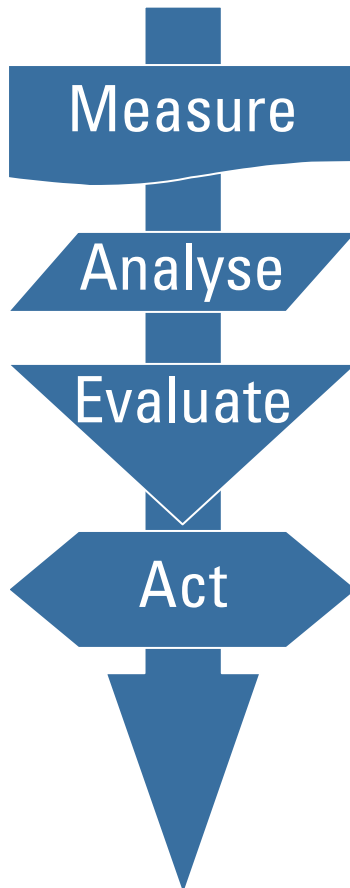
Balfour Beatty Rail



Balfour Beatty Rail

- ▶ design & build contractor
- ▶ producer & supplier of core systems
- ▶ track, electrification, signalling
- ▶ installer & maintainer of railway infrastructure
- ▶ national & international references
- ▶ main line, commuter, light rail train and especially high-speed

Asset Management Strategy – Predict And Prevent



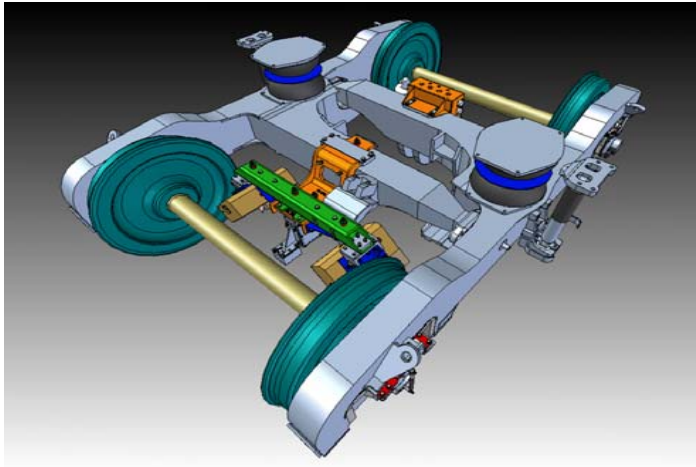
Objectives

- ▶ Ensure safe and reliable operation
- ▶ At affordable cost
- ▶ Avoid down-times or even accidents
- ▶ Reduce exposition to risk during operation and maintenance

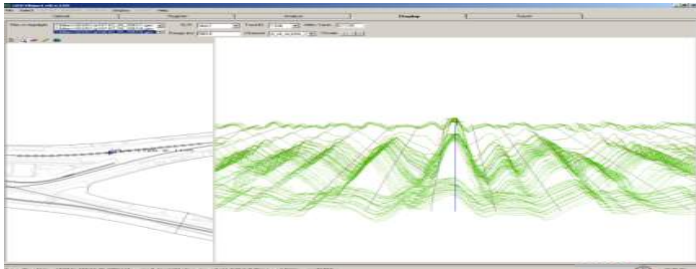
Strategy

- ▶ Apply smart infrastructure and processes
- ▶ Predict and prevent

Measure – Example „Unattended Track Geometry“



- ▶ Monitors geometry, ride quality, vibration
- ▶ Enables visual inspection at the same time
- ▶ Applicable on maintenance trains or on regular service trains
- ▶ Inertial and optical measuring systems in combination with
- ▶ Video surveillance



Frequent Measurement At Low Cost

Queensland Rail Cairns Tilt Train



- ▶ Precision GPS based location
- ▶ Ride quality
- ▶ Automatic data download
- ▶ 'Real-time' alerts
- ▶ *DataMap™*

Northern Ireland Railways



- ▶ GPS and Tag based location
- ▶ Automatic data download
- ▶ Video survey
- ▶ Link node model
- ▶ *DataMap™*

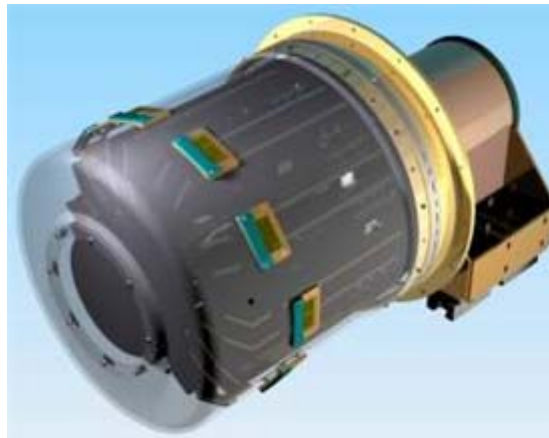
London Underground Metronet



- ▶ Tag based location
- ▶ Triggered video
- ▶ Ride quality
- ▶ Automatic download
- ▶ "Real-time" alerts
- ▶ Synchronised data display (*DataMap™*)

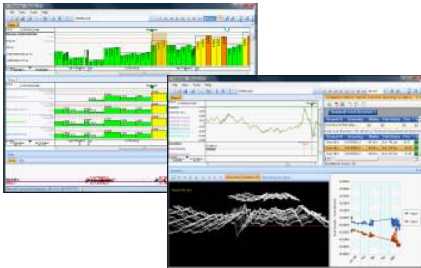
LaserFlex – Continuous Structure Profile Management

- ▶ Trolley or train-mounted
- ▶ High speed
- ▶ High accuracy digital system
- ▶ Integral track geometry measurement
- ▶ No moving parts
- ▶ Clearance measurement
- ▶ Asset recording
- ▶ Asset change management
- ▶ Interface with *DataMap™*



Analyse And Evaluate – DataMap, MR.pro, AssetView

DataMap™



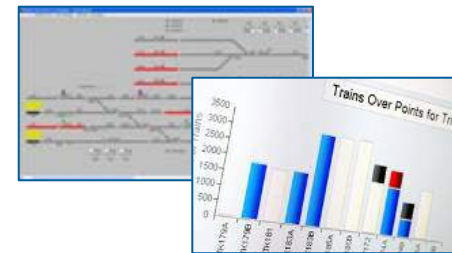
- ▶ Asset Management Solution
- ▶ Best use of available asset condition data
- ▶ Accurate alignment of condition data
- ▶ Visualises a complete range of asset condition information
- ▶ Enables 'Predict and Prevent' maintenance

MR.pro®



- ▶ Infrastructure Data Management
- ▶ Structured on-track evaluation and classification of defects
- ▶ Comprehensive overview of type and condition of track
- ▶ Planning, budgeting, realization and controlling
- ▶ Interface to ERP-Software SAP-PM

AssetView



- ▶ Monitoring signalling assets
- ▶ Turns data into useful information
- ▶ Supports 'Predict and Prevent'
- ▶ Uses data in a predictive manner to identify trends and predict performance of assets
- ▶ Universal system compatible with all data loggers

Key Benefits of Asset Management Tools

- ▶ Reduces maintenance costs
- ▶ Enables life extension rather than renewal
- ▶ Improves safety management
- ▶ Scalable solution from individual line to national network
- ▶ Cost effective audit record of asset condition
- ▶ Identify operational train performance improvement
- ▶ Enables virtual track walking
- ▶ Supports more effective maintenance
- ▶ Better utilisation of costly plant
- ▶ Reduces unplanned maintenance activity
- ▶ Helps the user make sense of measurement information
- ▶ Reduce levels of analysis and management
- ▶ More pro-active maintenance monitoring

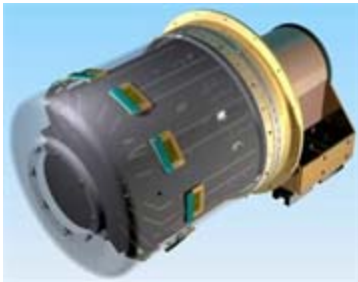
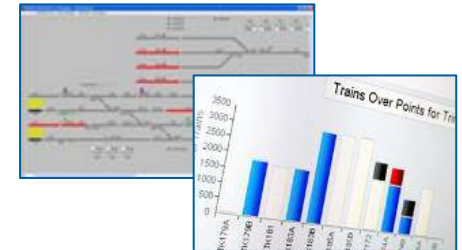


Complete Range Of Asset Management Technologies



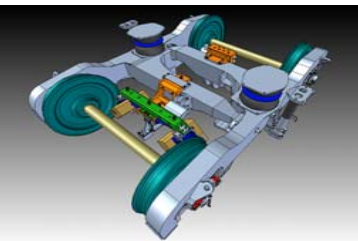
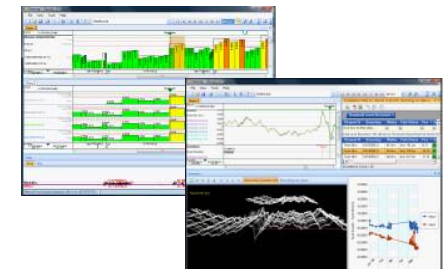
► *Event Logging*

► *AssetView*



► *Structure Measurement*

► *DataMap*



► *Track Geometry*

► *MR.pro*



Thank you for your attention!

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