

Trimble Nexala Solutions

TRIMBLE. INTELLIGENCE IN RAIL.

Trimble Manages

THE COMPLETE RAIL ASSET LIFECYCLE

DELIVERING INTELLIGENT ASSET DATA TO ROLLING STOCK OPERATORS

Informed by years of experience in the industry, and working with rail operators, Nexala—A Trimble Company has developed an integrated suite of products specifically addressing the needs of the rail transport sector. From real-time remote diagnostics through to full fleet maintenance a strong focus on research and innovation has developed a solution suite with an extensive depth of functionality.

REMOTE DIAGNOSTICS

Trimble® Nexala remote diagnostic solutions utilize on-train equipment and cloud-based software to deliver real-time fleet-wide diagnostic information. Remotely accessing rolling stock data these solutions process vast quantities of raw data from on-board systems in real time, providing a comprehensive view of overall fleet status and location. These solutions provide information of on-train systems

and drivers' controls, effectively providing a remote view of a train's state. Trimble's range of real-time remote diagnostics solutions provide savings for the engineering, maintenance, and fleet operations managers of train operating companies that need to optimize maintenance programs, increase asset utilization, and improve fleet management.

IN-SERVICE PERFORMANCE

Nexala's performance planning and management solution enables operators to make the most of diagnostic data and plan for optimum performance. Utilizing timetable, actual vehicle location, and real-time diagnostic information the solution identifies the root cause of delays and plans journeys for optimum timetable adherence. Integrating with control room and maintenance depot environments,

the solution analyzes timetable performance and performs section delay analysis to identify trends as they occur within a fleet. The solution provides operations teams with in-service recommendations when fleet failures occur to improve service punctuality and minimize fuel consumption and direct integration with Nexala's on-board cab advisory system keeps drivers informed.

ENGINEERING ASSET MANAGEMENT

The Trimble Nexala engineering asset management solution facilitates the efficient running of maintenance and asset management. Designed specifically for the rail sector, whether managing rolling stock or just specific critical components (i.e. wheelsets or brakes), the solution allows for efficient workshop management and defect reporting. Bringing maintenance planning and defect

reporting together in one place leads to the effective planning of maintenance across depots, resources, and material requirements with reduced data silos and increased collaboration. With the utilization of mobile apps and interfaces to existing back-office systems, the solution helps achieve optimum asset availability and labor utilization.

Complete Solution

END-TO-END RAIL ASSET LIFECYCLE MANAGEMENT



Trimble R2M System

REAL-TIME REMOTE DIAGNOSTIC MONITORING

Trimble R2M system provides a comprehensive view of fleet status including specific on-train faults, recommended actions, and it identifies potential faults that may arise in the future.

Trimble P2M System

ROLLING STOCK IN-SERVICE PLANNING AND PERFORMANCE MANAGEMENT

Trimble P2M system uses timetable, vehicle location, and real-time in-service performance diagnostic data to plan for optimal timetable adherence and fuel efficiency.

Trimble E2M System

ENGINEERING MAINTENANCE MANAGEMENT

Trimble E2M rail engineering asset and maintenance system manages assets and components, streamlines parts and materials usage, and optimizes resources and procurement.

Trimble D2M System

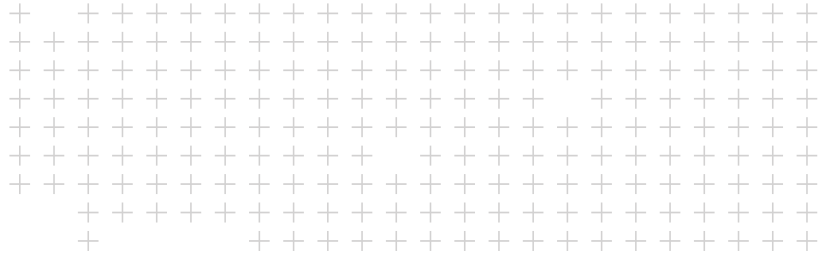
ROLLING STOCK RESOURCE ALLOCATION

Trimble D2M is a rolling stock allocation and management system that provides on the day control of resources to maximize utilization and delivery of rail services and minimize disruption.

Trimble C2M System

COMPONENT CONDITION MONITORING

Trimble C2M system provides full condition monitoring of key components, such as wheels and brakes, reporting on defect identification, wear detection, and automating maintenance planning.



About Trimble

TRIMBLE. INTELLIGENCE IN RAIL.

Trimble's rail solutions combine the latest in sensors and monitoring technologies with customized software and wireless communications to quickly and accurately capture the data needed to maintain and construct rail infrastructure or to manage rail transport assets.

Trimble's rail asset lifecycle management products manage the lifecycle of rail transport assets from operation through maintenance and repair. In 2014, Trimble acquired Nexala of Dublin, Ireland, providers of data aggregation and analytics tools for engineering and operations of rolling stock. In 2017, Trimble acquired Beena Vision of Atlanta, Georgia, a manufacturer of vision-based automatic wayside rail inspection systems. Using this comprehensive portfolio of

on-board and wayside condition monitoring solutions, rail companies can improve operational efficiencies, manage service levels and reduce costs, while ensuring that service is maintained to the highest level. Customers using Trimble solutions include major freight operators such as BNSF, Aurizon, Norfolk Southern, and Canadian National as well as many passenger operators such as South Western Railway, Eurostar, SNCF, Irish Rail, the Go-Ahead group, Arriva, and Greater Anglia among others.

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