

# nexala

*Engineering Next Generation Transport Solutions*

## Case Study

### Transport Asset Management

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### Selected Solution Components

Nexala was chosen to supply the complete asset maintenance and management solution.

The Nexala solution comprises: Nexala Equinox™, Insights™ and Spectrum™ which together provide the end to end solution for the Hitachi Maintenance business.

*“Nexala were chosen due to their established record within the UK rail sector. We evaluated a number of systems software providers and chose Nexala due to the breadth of functionality of their systems, their rail specific solutions and the match with our requirements”*

*Andy Barr  
Head of Maintenance Delivery, Hitachi*

### Project details overview

All rolling stock and associated spares are included in the system as is data on asset type, component hierarchy; operational status, identification data, maintenance plan and modification status.

The Nexala Solution manages both scheduled and unscheduled maintenance activities at both unit and component level and is used to track and produce maintenance plans based on calendar days (though the system can be used to with running days and service mileage also). Availability of the fleet is also tracked via service status and a visual indication of current fleet status.

Staff details are included within the system, in the HR module, and enables the system to cater for the allocation to teams and sub-teams. Staff data includes personal details, employment history, medical status, competency certificate records and chargeable rates. Training and competency records are available within the system and a process of preferred allocation based on competence is supported in the work allocation process. Tasks are linked to competence so that when a task has been undertaken, the competence expiry date is automatically updated.

The system prevents unauthorised or uncertified people carrying out work

### Maintenance Planning

Forward prediction of examination planning is incorporated into the system, using either an average predicted future mileage or an estimated mileage based on previous use. Specialist tools and equipment are required in the system along with a process for tracking calibration and usage.

‘Block Cards’ are provided which define the sub-level maintenance activities within an examination. Note that the order of the tasks on the block card are definable by the user. Mileage is taken from the Genius system automatically daily (with manual intervention option) to provide information on service days/miles or kilometres run.

**Component Tracking**

All components that are held within the system must be capable of being tracked, either by serial number or by physical location (e.g. store & bin number). The status of each component must be held within the system to identify if it is serviceable, unserviceable or for scrap and so forth. The maintenance history of any serial numbered component remains with the item even when it is exchanged between vehicles or sub-systems. Materials data includes minimum and maximum stock levels, lead time to delivery, cost, minimum quantity and supplier.

A forward requirements planner for all scheduled materials is included which is based on the forward exam plan process. The system generates materials orders for direct dispatch to suppliers. Materials received / issued / transferred and stock check protocols are also supported. Minimum quantity and nil stock alarms can be set within the system. Stores audit and stock check functions are available within the system and stock level correction is available to approved users.

A process for tracking warranty start/end dates and warranty claim status is available for both on the local system and specific data is accessible remotely by web based technology, primarily for use by the supplier base.

A forward forecast of the workload and materials requirement for the fleet is available at all times, for demand planning purposes the key variables can be changed to all 'what if' scenario's to be run on the model, the output covers the scheduled maintenance regime and also the materials usage requirements for the fleet. The Maintenance Management System data forms the basis for this predictive work

**Kardex & Barcoding Interfaces**

Hitachi manage their stock and material processes using a Kardex automated electronic stock racking system to improve security, tracking and stock accuracy levels. As Equinox already contains a full stock management module, it was a simple matter to create an interface to Kardex to allow both systems to work seamlessly. Equinox can now pinpoint where stock is stored and can ensure that all parts are available for any scheduled maintenance work.

Hitachi also use a barcoding system for all assets, parts and materials and this allows full traceability of valuable assets from procurement and installation on the vehicle through to repair, replacement and eventually to the item being scrapped. Equinox therefore knows at all times the full history and exact location of every trackable asset, part, component and sub-component in the fleet. Note that this level of traceability is fully defined by Hitachi in Equinox.

**MRX – wheelset & brake measurement system**

MRX is a trackside maintenance inspection system which measures wheel profiles, axle loads, brake and brake pad thickness. Nexala developed a real time interface to MRX and monitors all measurements from the system. When any measurement exceeds a threshold, Equinox can raise a work report to take corrective action.

**Performance Management**

The Nexala Insights™ planning and analysis platform enables users to react to events in real-time; make calculated and informed decisions; build scenarios and plan for all eventualities; and use highly accurate forecasting techniques to ensure revenues, costs, parts, materials and stocks are maintained at their optimal levels. It provides historical trend analysis, MIS dashboards and KPI scorecards