



FLEETwise
Powered by QuesterTangent

Smart wayside management software

FleetWise is innovative wayside data management software specifically designed to help transit authorities achieve superior fleet performance by collecting, distributing and analyzing fleet operational and maintenance data. This solution offers real-time fleet readiness information, enhanced software management, proactive maintenance, and in-depth diagnostic tools.



Rising to the challenge

Fleet operators today face significant challenges including aging infrastructure and vehicle fleets, plus a growing demand for safer and more efficient transit. These ongoing pressures must also be balanced with economic realities.

A common issue in maintenance and operations is the inaccessibility of data in on-train equipment. Collecting this information is expensive, labor-intensive and error prone. Even if the data is available on the wayside, many authorities lack a unified view of the operational readiness and maintenance status of their whole fleet. These challenges are significant roadblocks to achieving maximum fleet uptime and availability.

Centralizing and automating the collection and storage of maintenance and operational data from the entire fleet enhances fleet readiness, encourages proactive maintenance and provides in-depth diagnostic tools to help transit authorities keep their fleets running more smoothly and efficiently.

Flexible solutions for complex needs

Quester Tangent is a trusted partner with over 20 years of industry expertise and service-proven installations. Our FleetWise wayside solution is designed with secure, reliable technology that works with any type of data or fleet and integrates with new or existing wayside communications and IT infrastructure.

FleetWise provides operators and maintainers with a centralized database and intuitive user applications that extend the value of smart trains, turning data into business decisions that reduce the total cost of ownership and ultimately improve revenue service.

Coupled with Quester Tangent's system integration and project management expertise, this flexible, secure solution provides powerful tools that help fleet operators move to the next level of maintenance and software management to respond to customer needs both now and in the future.

Benefits



Effective vehicle subsystem software

Multiple subsystems, each with their own set of software and configuration files, make version control bewildering. Manage the complexity by specifying a standard configuration for each car type and query other cars to ensure a match. Color-coded status indicators help you quickly find and fix software version issues.



A complete, integrated solution

FleetWise runs within your existing IT infrastructure and facilitates managing the communications network, fleet data and vehicle systems for the entire fleet. The applications are modular and can be designed to support established workflows and existing systems to provide a valuable new features. Our modular approach means high levels of security, customization and functionality.



Instant operational status

Get a complete picture of your entire operation, from the number of trains at each location and their software configuration status, down to the latest faults reported by equipment on a single car. Check fleet readiness, Wi-Fi connection, and equipment status at a glance, and retrieve detailed diagnostic data with a click of the mouse. Stream live video from a car's security camera – either on demand or upon activation of a passenger emergency intercom – and help resolve an on-train incident from the wayside.



Enhanced proactive maintenance

Create prioritized alerts to identify important maintenance events so they can be scheduled before they affect downtime. Take advantage of user-defined data snapshots that capture vehicle status at a specific time or from a trigger event. Enable quick visual analysis for fast resolution of complex intermittent faults.



Powerful two-way communication

Two-way communication means that FleetWise can talk to a car, train or the entire fleet, including the ability to schedule log and stored video downloads. See what the driver sees during revenue service in order to help make the right decision about a car that has faults. Diagnose complex problems through a remote computer connection without having to be present on the train.



Rich data analysis

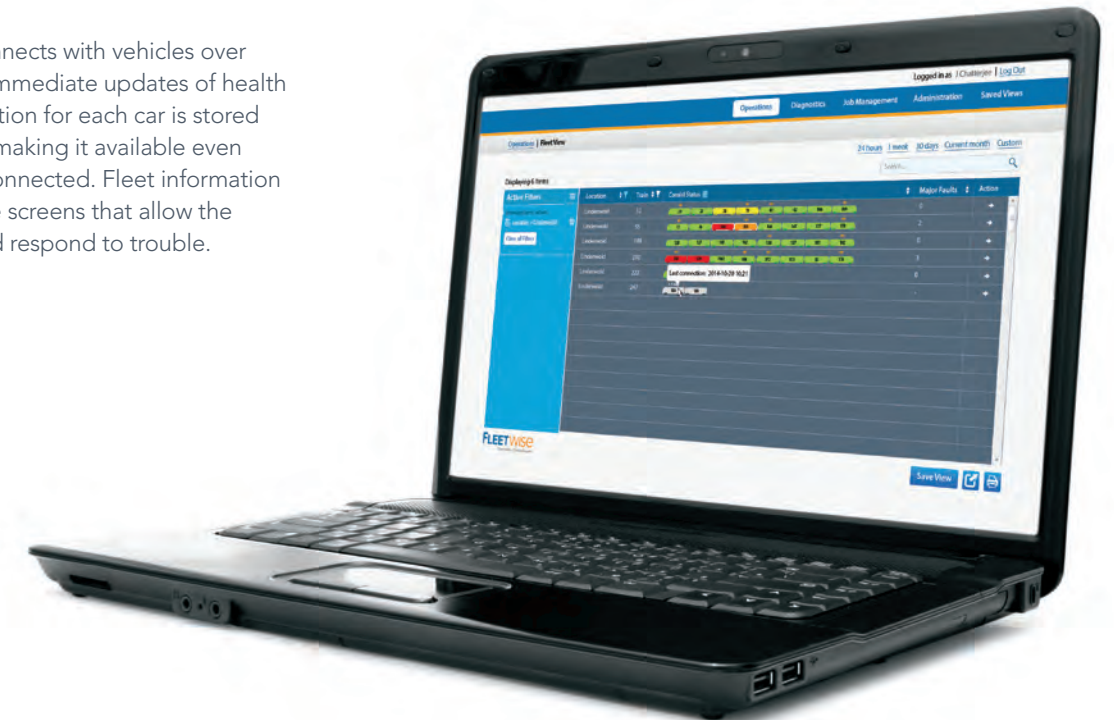
FleetWise contains potent database features that allow you to get even more out of your fleet. Study historical data to discover trends and optimize future performance. Create reports, share information with other teams and interface with existing software systems to save time and make better business decisions. With FleetWise software, it's easy to collect, share, and analyze information for exceptional fleet efficiency.

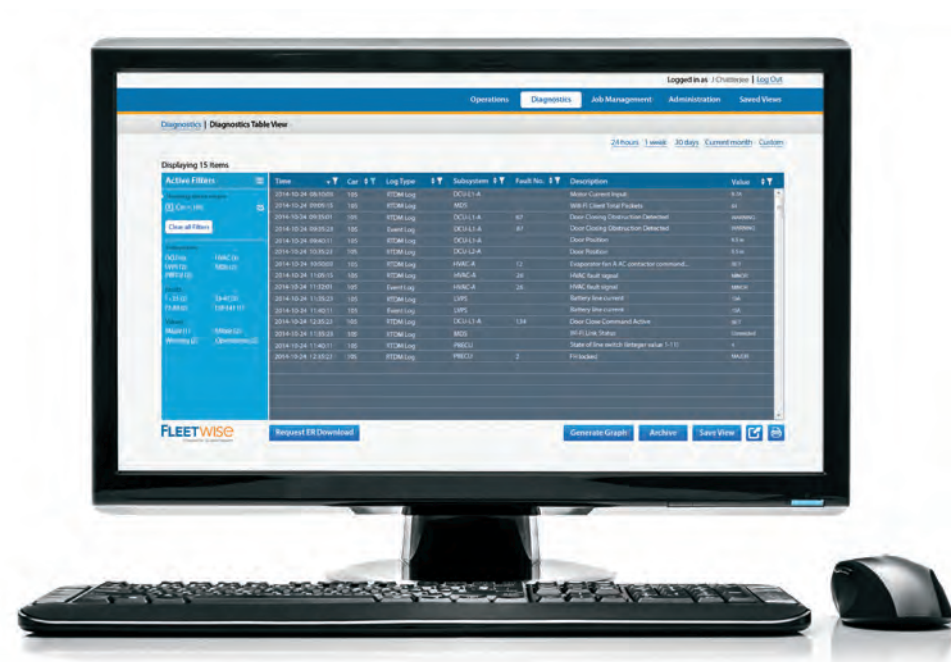


FleetWise Features

Remote Communication

FleetWise automatically connects with vehicles over Wi-Fi or cellular to receive immediate updates of health status and location. Information for each car is stored in the FleetWise database, making it available even when the vehicles are not connected. Fleet information is provided through intuitive screens that allow the operator to quickly spot and respond to trouble.





Comprehensive Database

All data received from the fleet is stored and managed through the FleetWise database. Data from all onboard subsystems is combined into a single searchable resource. Attributes, such as status and severity, allow data to be quickly sorted and filtered by relevance. Configurable troubleshooting tips provide direction to operators and maintainers.

Data Viewing and Analysis

A secure web-based interface provides access to data from laptops and PC workstations.

Data can be viewed in several modes to make analysis easier:

- » **Operations Overview** gives a high-level view of fleet status.
- » **Fleet View** provides a graphical view of all trains and cars with color-coded status and connection information. From the Fleet View, a user can quickly drill down to more detailed views.
- » **Car View** gives a full status summary of a selected car or married pair, including key operational data and the fault status of each subsystem.
- » **Diagnostics Table View** reports historical logged data in filtered configurable lists. Filter presets give quick access to frequently viewed data.
- » **Graph View** presents the data as a stacked strip chart, allowing trends and correlations to be easily spotted.





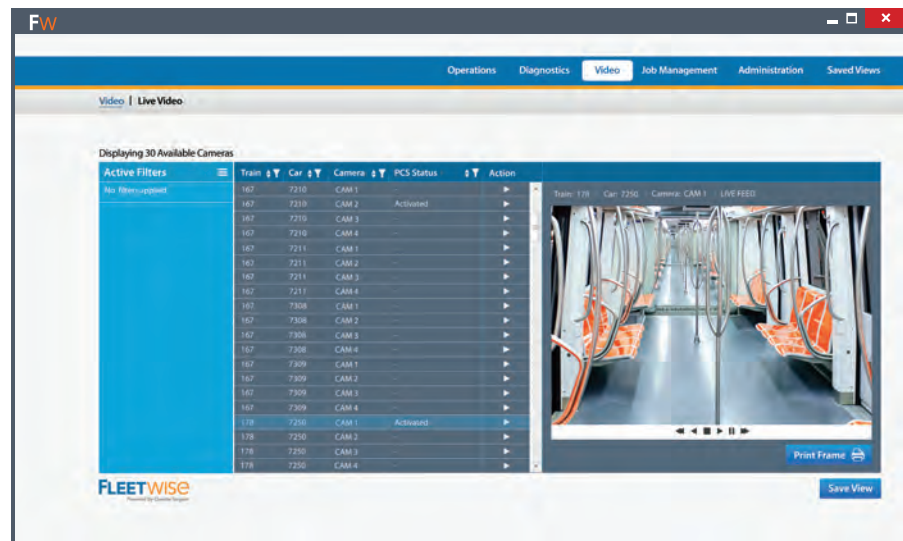
Data Collection

FleetWise provides complete remote access to all on-board data, including the Event Recorder. Sophisticated snapshot data queries automatically collect related operational data both before and after a fault. Data can be transferred wirelessly or delivered via memory stick or laptop.



Video Surveillance

FleetWise integrates with on-train CCTV systems for access to live and recorded video. Video downloads are coordinated with other transfers to maximize bandwidth. Video selection can be filtered by time, car and camera. Live video screens give immediate visibility into onboard activity, and can be triggered by passenger emergency intercom activation. FleetWise supports integration with external management servers.

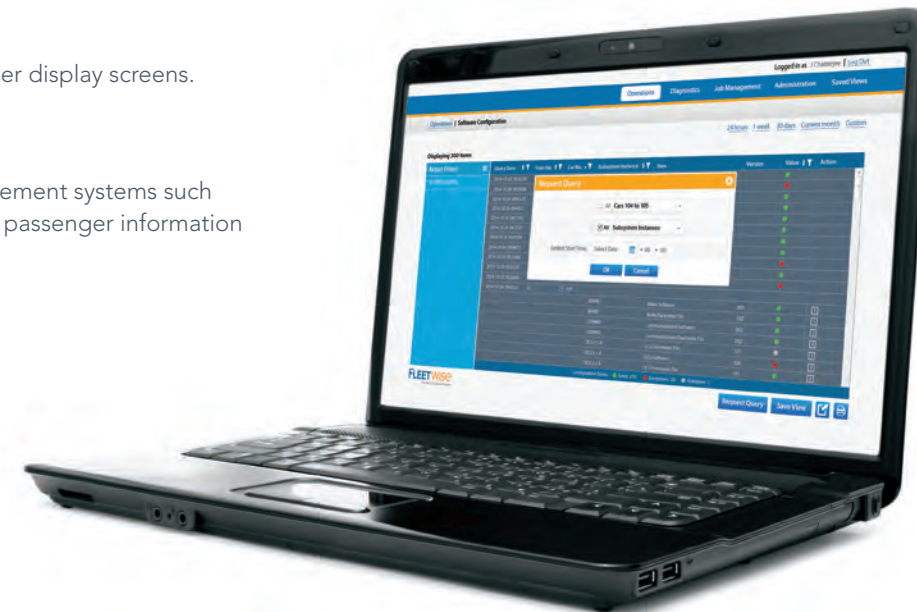


Fleet Management

FleetWise provides central management of on-train systems including:

- » Coordinating system configuration updates.
- » Deploying passenger information system data for signs and automatic announcements.
- » Delivering infotainment content for passenger display screens.
- » Managing and reporting software versions.

FleetWise interfaces with other wayside management systems such as asset management, video management and passenger information content management.



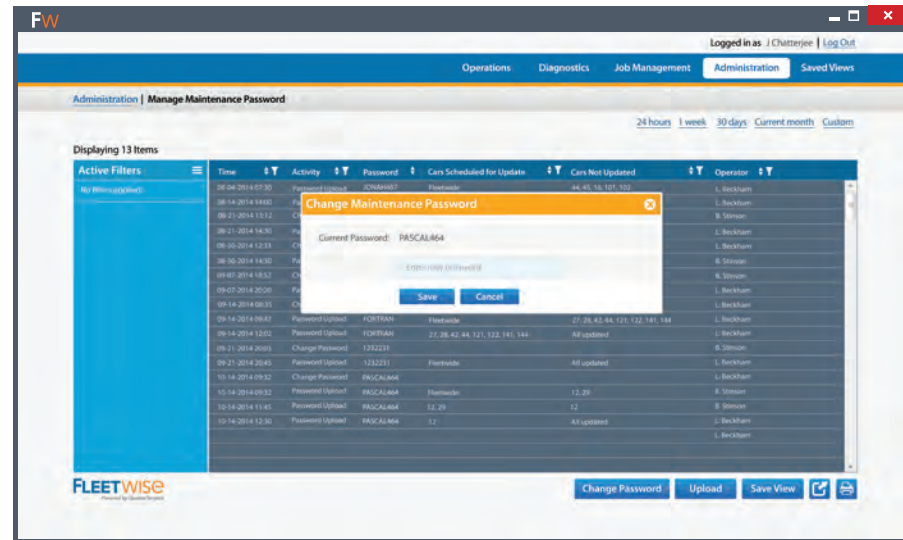
Schedule Operations

FleetWise can be used to schedule and prioritize data transfers and uploads, and can create jobs that happen once, periodically, or based on trigger events. Scheduled jobs start automatically when communication with the train is established. Operations are prioritized to maximize time and bandwidth. Scheduled jobs can be cancelled, paused, restarted, and repeated.



Administrative Support

System access for FleetWise is controlled through both built-in security and integration with an existing network Windows Active Directory. User functions are limited based on assigned access levels. Built-in diagnostics provide administrators with the state of the FleetWise server, including database capacity and the status of running applications. Redundant servers can be deployed with fail-over in case of emergency. Database backups and archives are easily scheduled and performed.



FleetWise Highlights

Server operating system and database software

- » Microsoft Windows Server 2012 operating system.

- » Microsoft SQL Server Standard Edition 2012.

- » Compatible with Oracle or other databases.

Typical server infrastructure

Host computer

- » 19" rack with integrated cooling facilities.

- » Rack mount dual processor Application Server.

- » Support virtual VMWare environment.

- » Distributed application architecture supports redundancy, scalability and High Availability.

Archive hard drives

- » External data sources such as USB hard drives.

Applications

Operations User Interface

- » Web server access to operations, engineering, or configuration portals.

Diagnostic Core

- » Collects and stores fleet data and executes task scheduling for vehicle maintenance.

Time Server

- » Acts as an authoritative SNTP time server to the fleet.

Maintenance Interface

- » Provides remote access to on-train maintenance data.



Partner in operational efficiency

Founded in 1983, Quester Tangent is a leading North American supplier of train electronics and software solutions for the passenger rail and locomotive industries. Quester Tangent features a complete portfolio of rail technology products: **TrainWise**, flexible on-board train and locomotive electronics, **FleetWise**, innovative wayside software and **TestWise**, comprehensive test equipment products.

FleetWise encompasses servers, database and applications that support improved uptime and availability of the fleet. This customizable solution is tailored to specific customer needs through custom engineering and by adapting core applications for maintenance and diagnostics, communications infrastructure and other functions. This proven offer provides operators and maintainers with real-time fleet readiness information, enhanced software management, proactive maintenance, and in-depth diagnostic tools.

Contact Quester Tangent today at 1 855 510-7837 and find out how FleetWise can help you optimize your fleet.



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