

# White Paper

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Maximizing Competitiveness Through Remote  
Vehicle Management Systems

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## Overview

### Reducing Vehicle Maintenance Costs

Today's fleet manager has a never ending list of priorities that are equally important to keep vehicles running and productive. Every fleet is measured on its bottom line performance and therefore maintenance. Maintaining vehicles, including repair, upkeep and downtime, can have a huge impact on a fleet's bottom line. A proactive, preventive maintenance program can help fleet managers keep vehicle repair costs and downtime to a minimum. Many fleets simply take a reactive approach to vehicle maintenance because they do not have access to the right tools. In a widely distributed fleet, that could mean costly repairs, not to mention vehicle downtime. Fleet managers need to be able to monitor and collect data on the "health" of their vehicles to fix problems early and reduce costs.

### Scheduled Maintenance

Regularly scheduled maintenance is the most effective way to minimize vehicle downtime. Even simple maintenance like regular oil changes can help reduce engine wear and make the vehicle run cooler and last longer, according to the CAA.<sup>1</sup> Setting preventative maintenance schedules requires knowing the type of vehicle, the usage (mileage, hours, operating environment), Original Equipment Manufacturer (OEM) warranty, recall status, and regulatory requirements. In addition, it is beneficial to know the types of diagnostic problems that typically occur with different vehicle types.

### Vehicle Performance

Information on individual vehicle performance on the road is vital to reduce maintenance costs. For example, when trucks are traveling in high heat and steep grades; monitoring the temperature of the engine, the air intake temperature, and oil pressure can help fleet managers gauge engine performance. Having access to statistics on vehicle diagnostics over time is also important to determine if a vehicle is performing optimally.

### Fuel Economy

Vehicles operate more efficiently when they are well maintained. Therefore, improving vehicle performance through preventative maintenance can improve fuel economy. Monitoring unauthorized vehicle use, excessive speeding, MPG and idling can also greatly reduce fuel usage. Repairing a vehicle that is out of tune can improve its gas mileage by an average of 4 percent.<sup>2</sup> Furthermore, fixing a serious maintenance problem, such as a faulty oxygen sensor, can improve your mileage by as much as 40 percent.<sup>3</sup>

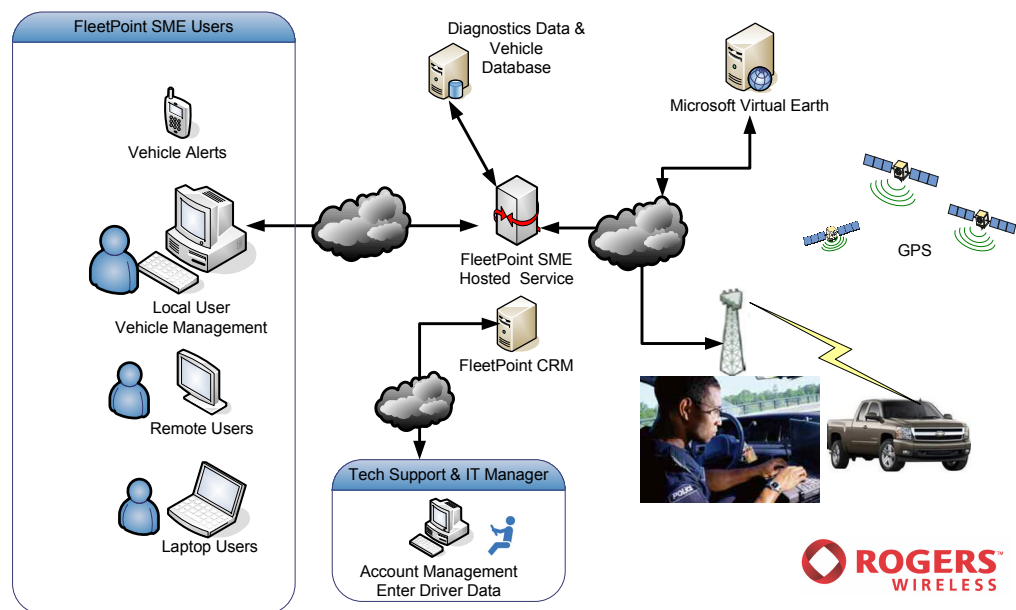
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# Monitoring Fleet Performance with FleetPoint™ SME

## Wireless Fleet Performance Management

Imagine receiving instant notification by email when a vehicle has a transmission malfunction or engine problem so it can be repaired quickly. Combine that with the ability to track the exact location and speed of each vehicle 24/7 from anywhere in the world. That is the power of the FleetPoint SME wireless vehicle management system. FleetPoint SME gives fleet managers the power to access near real-time productivity and efficiency information on virtually every aspect of their fleet operations. FleetPoint SME's in-vehicle device collects and wirelessly transmits data directly from a vehicle's engine computer and from a global positioning system (GPS) to the FleetPoint gateway and then to the customer. Fleet managers can log on and view specific vehicle data such as current location, fuel consumption (for most vehicles), mileage, speed and idle-time; 24/7 through a secure, easy-to-use web application. At the same time, FleetPoint SME's remote diagnostic capabilities notify fleet managers via email when an exception occurs within the fleet, such as when the check engine light is illuminated. By identifying issues early, FleetPoint SME allows fleet managers to proactively fix vehicle problems before they escalate into larger issues. This keeps vehicles running and in production.

Figure 1: How FleetPoint SME Works



**FleetPoint SME fleet maintenance efficiencies**

## Lowering Vehicle Downtime

- A. **Unauthorized or unnecessary driving wear and tear costs** According to Consumer Reports, wear and tear often accounts for nearly \$0.25 per mile.<sup>3</sup> Any unauthorized or unnecessary vehicle use can contribute to vehicle wear and tear. Fleet managers can use FleetPoint SME to verify daily route and stop locations. By analyzing driving patterns and optimizing routes, the system can help reduce unnecessary vehicle use.
- B. **Diagnostic Trouble Code Alerts** Typically, managers wait days or even weeks for drivers to report that a vehicle's check engine light is on. FleetPoint SME automatically notifies fleet managers by e-mail immediately and reports a diagnostic trouble code (DTC). FleetPoint SME provides the precise DTC and a description identifying the specific nature of the problem. This allows technicians to begin their analysis immediately instead of spending time trying to determine what is wrong.

By identifying issues early, FleetPoint SME allows fleet managers to proactively fix vehicle problems before they escalate into larger issues. Fleet managers with relatively new vehicles can minimize repair expenses by taking advantage of vehicle warranties. FleetPoint has collected DTCs from vehicles in fleets across Canada and the U.S. Analyzing aggregate FleetPoint data shows that 47 percent of diagnostic trouble codes for light/medium duty (OBD-II) vehicles were emissions related and 24 percent were related to Fuel Consumption issues.

Top Individual Diagnostic Trouble Codes Collected by FleetPoint SME:

- #1 Light Vehicle DTC (P0300) is related to cylinder misfires. Misfires can be indicative of poor maintenance or of a faulty or worn ignition system.
- #2 Light Vehicle DTC (P0171) indicates that the air to fuel mixture is suboptimal. This could be indicative of a faulty O2 sensor or a faulty/worn fuel pump.
- #3 Light Vehicle DTC (P0420) indicates that there may be a problem with the vehicle catalyst and it should probably be replaced.

## Scheduled Maintenance Alerts

FleetPoint SME provides daily odometer updates and notifies users by email when vehicles have reached predetermined maintenance intervals. Fleet managers can easily establish custom maintenance alert schedules and receive emails when vehicles are due for maintenance based on mileage or other criteria. These schedules enable timely regular maintenance and repairs which extend vehicle life and increase vehicle resale value.

## Idle-time Data

Excessive vehicle idling leads to increased fuel expenses and engine wear. On heavy duty vehicles, 0.82 gallons of gas are consumed for every hour of idle-time.<sup>5</sup> Fleet managers utilizing FleetPoint SME can monitor idle-time by vehicle to determine which vehicles exceed a certain idle threshold such as 15 percent. Fleet managers can also run a report to compare idle-time as well as fuel consumed between similarly operated vehicles.

## Improve Maintenance Accuracy

### Automatic odometer readings

For a distributed fleet, accurate odometer readings are usually a manual, error-prone process when mileage is collected at the fuel pump. FleetPoint SME automates this process by calculating mileage using data from the vehicle's engine computer. This eliminates the necessity to physically audit vehicle odometer information, which can be labor-intensive and time consuming. Access to accurate mileage information is essential to a good preventive maintenance program. In addition, mileage information can be exported into existing fleet management systems using FleetPoint SME's data integration services.

### For More Information

For more information about optimizing fleet maintenance with FleetPoint SME, contact FleetPoint at 1-866-394-8949 or visit [www.fleetpoint.net](http://www.fleetpoint.net).

<sup>1</sup> "Keep Your Car Running with Regular Maintenance." AAA. October 2006  
[http://www.aaacalif.com/auto/maintain/car\\_care\\_details.asp](http://www.aaacalif.com/auto/maintain/car_care_details.asp)

<sup>2</sup> "Keeping Your Car in Shape." *EERE*. October 2006, from  
<http://www.fueleconomy.gov/feg/maintain.shtml>.

<sup>3</sup> February 2004. "Leasing Tips: The wrong Decision Can Cost You Money" *Consumer Reports*. October 2006, from <http://www.consumerreports.org>.

<sup>4</sup> October 2002. "Study of Exhaust Emissions from Idling Heavy-Duty Diesel Trucks and Commercially Available Idle-Reducing Devices." *U.S. Environmental protection Agency*. October 2006, from <http://www.epa.gov/smartway/idlingimpacts.htm>.