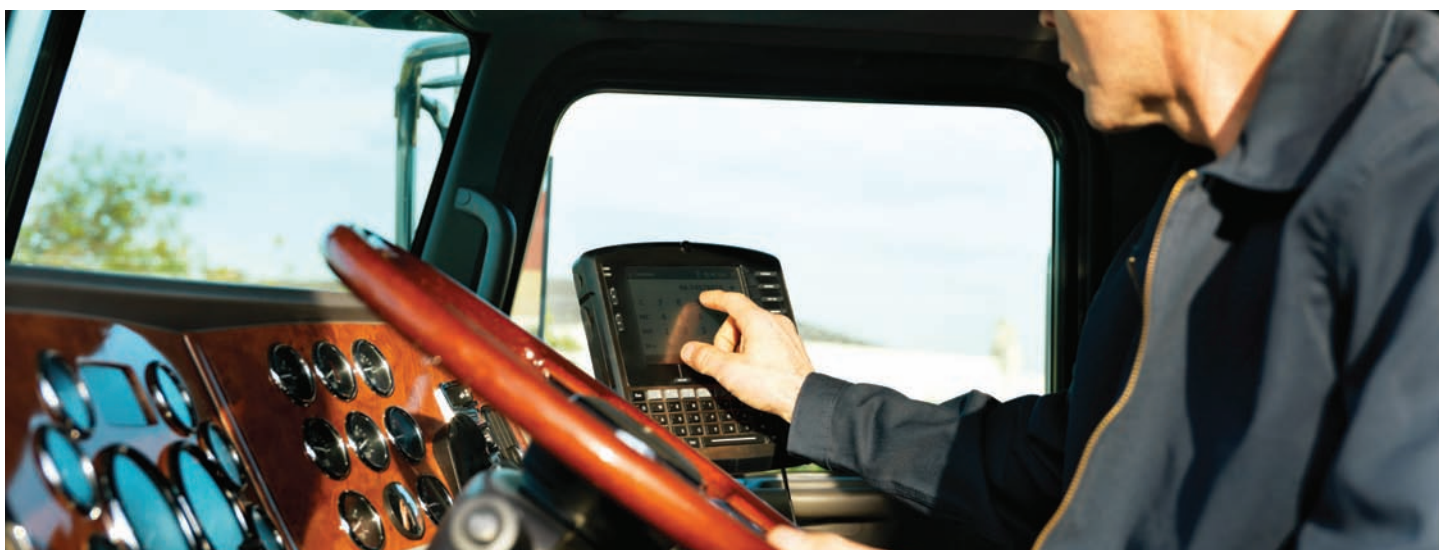# LEVERAGING AN OPEN-TELEMATICS PLATFORM TO IMPROVE EFFICIENCY AND PROFITABILITY

THE MOTOROLA VC6096

The VC6096 reaches beyond the limited 'silo' of benefits that point solutions offer, allowing businesses to deploy a single device capable of supporting the enterprise applications that are required to collect virtually all available business data from the trucks — from telematics and GPS location-based information to proof of delivery, proof of condition and more.

THE CHALLENGE: MAINTAINING PROFITABILITY IN THE FACE OF RISING COSTS

Today's transportation and logistics (T&L) providers face a major challenge: the volatility of diesel fuel costs combined with rising labor costs pose a constant threat to margins and profitability. Since diesel fuel and labor represent the two largest costs for the industry[1], in order to remain competitive, T&L providers must find new ways to increase fuel efficiency as well as improve driver productivity.

Everyday strategies — from the elimination of discretionary idling to enforcing compliance with speed limits and maintaining optimal vehicle condition — can have a dramatic impact on fuel efficiency. For example, a truck traveling at 75 mph consumes 27% more fuel than it does at 65 mph.[2] Without visibility into real-time

driving behavior and engine statistics, fleet managers are unable to determine and implement practices which could substantially reduce fuel consumption. Driver utilization cannot be improved, without the ability to simplify data collection procedures in the field. Drivers will continue to spend valuable time completing Hours of Service and fuel tax paperwork for compliance — time that could be better spent on the road.

THE SOLUTION: GET THE DRIVER, VEHICLE AND OPERATIONAL EFFICIENCY GAINS YOU NEED TO COMBAT RISING COSTS WITH A REAL-TIME CONNECTION TO YOUR VEHICLE FLEET

The VC6096 In-Vehicle Fixed-Mount Mobile Computer from Motorola addresses these challenges with an open-platform in-the-cab solution that combines rich telematics and world-class GPS capabilities with

high-performance technology architecture and a high-bandwidth 3.5G GSM HSDPA wireless WAN connection. The result is a device that can support the many real-time applications required to improve end-to-end fleet management, enabling a 'right now' window into driver behavior, engine condition, and vehicle location. Now, T&L providers can effectively reduce manual data collection requirements in the truck, improving driver productivity. And fleet managers can proactively manage driver behavior to reduce fuel consumption and protect the vehicle from unnecessary wear and tear.

With the VC6096, T&L providers can deploy applications that allow the automatic and continuous collection and transmission of the plethora of real-time data required to improve the efficiency and effectiveness of fleet managers, as well as driver and vehicle utilization. Real-time mileage, vehicle location, engine metrics, hours of service, arrival and departure times and more provides the actionable information fleet managers need to better manage drivers, vehicles and routes and practically eliminates driver paperwork by automating highway fuel tax computations, hours of service logs and more.

The VC6096 integrates all the capabilities of a cell phone, GPS and SAE J1708 and SAE J1939 heavy duty telematics into a single device that is specifically designed for life on the road. The ability to condense multiple solutions into one device maximizes precious cab space as well as reduces the need to purchase and manage multiple devices per truck. The SiRFstarIII GSC3ef/LP GPS chipset enables a signal lock in areas where signals are typically weak, providing GPS capabilities throughout more of your geographic driving territories. The ability to remotely manage the VC6096 keeps downtime at a minimum — your IT department inside the four walls can easily monitor, troubleshoot and resolve hardware and software-related issues for devices that may be thousands of miles away.

The ability to build on the VC6096 increases the value proposition for this mobility solution. Since the VC6096 supports Bluetooth, T&L providers can purchase a Bluetooth-enabled handheld mobile computer equipped with features such as bar code scanning and electronic signature capture to help streamline processes that take place outside the truck. Now, drivers can easily scan bar codes on pallets to automatically reconcile

shipments as they are loaded on and off the trucks, capture signatures for real-time proof of delivery and snap a picture of a load for indisputable proof of condition, all with a single device. When the driver returns to the truck cab, the handheld mobile computer can automatically and wirelessly transmit captured information to the VC6096 via Bluetooth, which in turn can instantly transmit the captured data back to your business systems — no driver action required. The ability to leverage the wireless WAN (WWAN) radio that is already integrated into the VC6096 substantially reduces the cost associated with enabling 'out of the truck' mobility solutions — no need to purchase a more expensive WWAN-enabled device or incur monthly cellular charges for a second device.

Motorola's decades of experience in successfully engineering mobile devices for mission critical public safety applications are infused into the VC6096, producing a device that delivers superior uptime, despite the rigors of life in a truck. Designed specifically for Less Than Truckload (LTL) — Line Haul Operations, Truck Load (TL), Over The Road (OTR) and Transport/Bulk operations, the VC6096 offers the military and industrial grade specifications required to ensure reliable operation, despite constant exposure to vehicle movement as well as extreme temperatures — from the broiling heat of a summer day to the chilling cold of a winter night. IP64 sealing ensures the device is dust tight and can withstand splashing liquid from any direction — including a spilled cup of coffee. In the past, it has been a challenge to manage mobile devices that are inside your trucks, virtually always out on the road. Motorola's Mobility Services Platform (MSP) addresses this issue, allowing T&L providers to remotely perform the routine tasks that are required to keep the VC6096 up and running — from day-to-day monitoring to downloading software updates and even taking control of the device to troubleshoot a problem — all from inside the walls of the business.

With this all-in-one cab solution, T&L providers can leverage the power of a constant voice and data connection between the truck and the company to successfully contain costs. Regardless of where your fleet may be, drivers remain connected to dispatchers as well as your back-office applications, able to access the tools required to help reduce costs and streamline processes for greater in-the-field efficiency.

KEY BENEFITS

- Increases driver productivity and safety
- Enables cost-effective compliance with fuel tax and hours of service reporting
- Improves fleet utilization and lifecycle
- Reduces mileage and fuel costs
- Reduces vehicle wear and tear and increases vehicle lifecycle
- Improves customer satisfaction
- Improve TCO and ROI for vehicle fleets

When the VC6096 is installed in the cabs of your trucks, you can support many real-time applications that can improve end-to-end fleet management, improving productivity and efficiency for drivers as well as the dispatch function. Support for telematics and GPS provides real-time mileage, vehicle location, engine metrics, hours of service, arrival and departure times and more. Driver paperwork is virutally eliminated since the completion of highway fuel tax computations, hours of service logs and more are automated. Visibility into driver behavior enables managers to proactively help reduce fuel consumption and protect the vehicle from unnecessary wear and tear. And the ability to leverage the Bluetooth connection allows T&L providers to build on this solution by adding a mobile handheld computer to automate many processes outside the truck — a quick scan of the bar codes on pallets can automatically reconcile shipments, signature capture can provide real-time proof of delivery and a photo of the load provides indisputable proof of condition.

MAKING THE MOST OUT OF A COMPREHENSIVE REAL-TIME STREAM OF BUSINESS DATA FROM YOUR VEHICLE FLEET

The VC6096 reaches beyond the limited 'silo' of benefits that point solutions offer, allowing businesses to deploy a single device capable of supporting the enterprise applications that are required to collect virtually all available business data from the trucks — from telematics and GPS location-based information to proof of delivery, proof of condition and more. The open platform of the VC6096 allows companies to mine the wealth of data associated with the vehicle, the driver and even the load itself, which in turn ripples throughout your business systems to positively impact drivers, vehicles, customer service, safety, liability — and the cost of doing business.

With the VC6096 installed in the cabs of vehicles, T&L providers can:

Improve the efficiency and accuracy of government compliance

Compliance with fuel tax reporting and hours of service (HOS) requirements can be a burdensome task for many transportation and logistics providers. The manual tracking of fuel tax data and hours of service on paper is a time-consuming and error-prone process — one that steals valuable driving time and leaves companies vulnerable to costly penalties and liability issues resulting from improper and inaccurate reporting.

The VC6096 enables the automatic computation of fuel tax and hours of service in real time, saving money and delivering peace of mind when it comes to government compliance. With integrated GPS and telematics support, the VC6096 enables the accurate capture of time and miles traveled within specific geographies to produce comprehensive required reports — all without driver intervention. As a result, the VC6096:

- *Increases driver productivity:* Drivers now have more time to spend on the road — and your same workforce can cover more miles and make more customer stops in a day, helping ensure that shipments are delivered on time, every time.

- *Increases report accuracy:* Data is collected and reported automatically — eliminating the risk of reporting errors, mistakes in data entry or the deliberate tampering of data.

Reduce fuel costs

The VC6096 provides T&L providers with access to the actionable data needed to proactively optimize fuel usage throughout the fleet. With real-time visibility into

fleet location, dispatch can respond to new orders as they are received throughout the day, easily dispatching the closest available driver — minimizing mileage while meeting customer service expectations. Turn-by-turn navigation applications help keep drivers on route, reducing unnecessary miles and fuel burned as a result of wrong turns. Drivers can easily determine the fastest route to a destination — and even spot and determine alternate routes around traffic jams to protect against excessive idling when traffic is stopped due to an accident or road closure.

Individual driver behavior that contributes to inefficient fuel usage is easy to spot and eliminate. For example, fleet managers can instantly notify drivers that are exceeding speed limits to reduce vehicle speed. Managers can question a deviation from a defined route, which might result in unnecessary out-of-route miles — or ask a driver who is detained at a loading dock to turn off the engine instead of allowing it to continue to idle. Finally, by providing the rich information set required to analyze fuel consumption and mileage norms across all vehicles in the fleet, companies can identify and address vehicles that are delivering less-than-par performance by either performing needed maintenance or correcting poor driving habits.

The result is the ability to effectively manage unnecessary fuel usage in an industry where even moderate gains in fuel efficiency can have a significant impact on the bottom line.

Reduce non-compliance penalties and fines
With an accurate and real-time view of hours of service, T&L providers are better equipped to manage their drivers and reduce the risk of violating hours of service regulations — as well as the costs associated with fines. Dispatch can effectively match new jobs to drivers with available hours, rather than those drivers who have insufficient availability to complete the assignment. Your fleet management application can even be configured to send an instant alert to both dispatch and the VC6096 to simultaneously warn fleet managers and drivers that an hours of service violation is about to occur — improving driver and road safety, in addition to compliance.

This same real-time visibility also makes it easy to provide accurate data for roadside inspections. By automating data collection, the VC6096 gives inspectors confidence that data is accurate and has not been altered. And with the instant availability of vehicle and inspection data, inspections are completed promptly — so your drivers are back on the road faster.

Reduce the cost of ensuring temperature sensitive loads
Support for analog input allows transportation and logistics providers in the refrigerated and frozen food industry to ensure that loads are transported at proper temperatures at all times — without requiring heavy data collection from drivers. With the VC6096, companies can easily deploy an application that can automatically monitor trailer temperature and refrigeration unit fuel levels. Now, T&L providers can cost-effectively track and record the temperature of a refrigerated load — no extra stops or paper forms required. Real-time visibility and alerts can warn drivers and dispatch if refrigeration fuel levels and temperatures are nearing pre-set thresholds — enabling the fast action required to prevent cargo spoilage, and the associated potential liability and losses. The elimination of the 'double touch' of data for this critical application substantially reduces the opportunity for errors that can occur when data is handwritten on a form and again when transcribed and entered into the computer at a later date by an administrator. The result is the ability to provide customers with concrete proof that perishable goods were kept within acceptable temperature levels to meet required government and customer regulations, throughout the truck's entire journey — without impacting driver productivity.

Improve dynamic routing to control costs and protect customer service levels
When telematics and GPS information is combined, route optimization and dynamic routing activities are enriched. Routing systems based on GPS data alone identify the driver physically closest to the customer location, even though that driver may have already fulfilled the available hours of service for the day. With real-time visibility into both driver hours and fleet location, dispatchers can best match drivers for new jobs based on their location and available hours.

This granular visibility provides the comprehensive data needed to best match drivers to loads. Time that might have been spent calling drivers only to discover that they have pulled over for the day is eliminated. And the risk of inadvertently dispatching a load to a driver who accepts a job that results in a violation of hours of service laws is also eliminated — reducing risk and the associated cost of non-compliance.

Protect revenue with better visibility into customer issues

By evaluating telematics data, transportation and logistics providers are able to determine which routes and customers produce the most billable miles — and the most revenue. Since the VC6096 automatically captures arrival and departure times, companies can see where trucks are detained at pickup in order to ensure the capture of any necessary fees for delays, as well as provide unquestionable proof in the event of a customer dispute. Evaluating data accumulated over time can identify which customers always have trucks back on the road in a timely manner, and which customers are consistently late. As a result, transportation and logistics providers are better able to proactively work with these lagging customers to reduce delays and customer penalty fees — improving vehicle utilization, customer satisfaction and the quality of the customer base as a whole.

Improve security with geofencing

The VC6096's GPS capabilities can be used to enhance the security and safety of vehicles, operators and cargo with geofencing applications. When a vehicle is moved beyond a pre-defined area, an alert can be instantly sent to dispatch — providing a critical head start in recovering stolen trucks and trailers as well as identifying potential emergencies.

Ensure safe driving habits...and reduce insurance premiums

Telematics data reveals a wealth of information about individual driving habits. The VC6096 lets supervisors identify which employees are routinely speeding, braking hard or engaging in other risky driving behavior. Armed with this data, T&L providers can correct poor or dangerous driving habits or release those drivers with consistently unsafe practices. The overall safety record of the driver pool is increased, reducing traffic violations and in turn, reducing insurance premiums. And weekly or monthly telematics reports can form the basis for safe driving reward programs, enabling companies to provide incentives for drivers to improve their behind-the-wheel behavior and safety record.

Maximize the utilization of your vehicle fleet

The VC6096 enables remote monitoring of engine metrics — from engine fault codes to temperature and oil pressure. The ability to identify speeding, heavy braking and other destructive driver behavior helps improve driver safety as well as vehicle health. Fleet managers now have the information they need to easily spot and address mechanical issues and engine malfunctions early — before they lead to more catastrophic failure. For example, visibility into excessive revolutions per minute (RPMs) helps fleet managers prevent unnecessary engine wear and tear and prolongs the life of the vehicle engine. The ability to perform timely and proactive maintenance reduces repair costs throughout the lifetime of a vehicle. And reductions in breakdowns in turn reduce driver downtime and costly delays, improving overall fleet reliability and uptime.

IMPROVE OPERATIONAL EFFICIENCY AND CUSTOMER SERVICE… WITH THE VC6096

The VC6096 provides the real-time information needed to improve overall operational efficiency — from fleet managers and dispatchers to your drivers and your vehicles — overcome thinning margins and protect the health of the business. By providing a window into the right real-time information, the VC6096 helps reduce costs while simultaneously improving driver and vehicle performance — and enabling the delivery of consistent customer service excellence — a measurable business advantage for transportation and logistics providers and their customers. Drivers spend more time in the driver's seat and less time on paperwork. Loads are picked up and delivered on time, every time, with the least miles driven and the least wear and tear on your vehicles. And T&L providers enjoy an improved total cost of ownership (TCO) and return on investment (ROI) for the company's most vital asset — the vehicle fleet.

For more information on Motorola's VC6096 and in-the-truck mobility, please visit us on the Web at www.motorola.com/VC6096 or access our global contact directory at www.motorola.com/enterprisemobility/contactus

ABOUT MOTOROLA ENTERPRISE MOBILITY SOLUTIONS

When you choose Motorola for your mobility solutions, you get the peace of mind that comes with choosing an industry leader as your technology partner. Motorola offers the proven expertise and technology you need to achieve maximum value and a fast return on investment — as well as first hand experience in virtually every size business in nearly every major industry. Every day, businesses of all sizes all over the world in all types of industries count on Motorola enterprise mobility solutions to maximize employee effectiveness, improve customer service and increase supply chain efficiency.

Our broad technology portfolio and world-class partnerships enable us to offer true end-to-end solutions that offer the simplicity of a single accountable source — regardless of the number of vendors involved. Our comprehensive product offering includes: rugged and enterprise class mobile computers with extensive advanced data capture and wireless communications options; business-class smartphones; handheld, mobile and fixed RFID readers; rugged two-way radios for always on voice communications; private wide area and local area wireless network infrastructure to deliver wireless connectivity to workers inside and outside the four walls — and to network multiple business locations; a partner channel delivering best-in-class applications; a suite of software applications for central and remote management of every aspect of your mobility solution; and a complete range of pre-and post-deployment services to help get and keep your mobile automation system solution running at peak performance every day of the year.

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Sources
1 http://www.trucksdeliver.org/issues/efficiency.html Heavy duty trucks burned more than 38 billion gallons of diesel fuel
   in 2006. Depending on the price of diesel, fuel is the industry's largest or second-largest cost, before or after labor costs.
   Becoming more efficient in fuel use is a goal that will help the industry and the nation.
2 http://www.trucksdeliver.org/recommendations/speed-limits.html
   A truck traveling at 75 mph consumes 27 percent more fuel than one going at 65 mph.

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