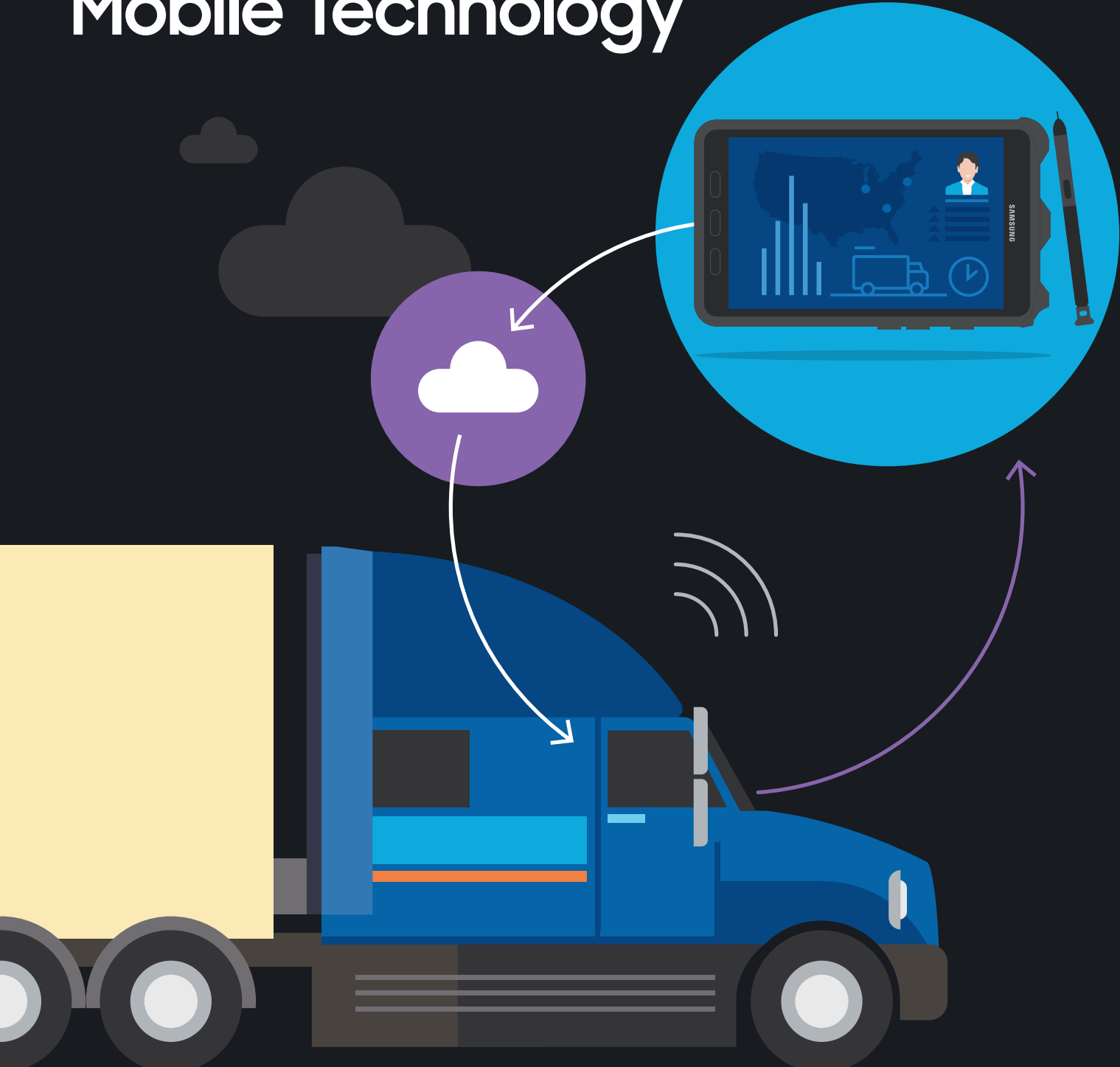


White Paper:

# How to Modernize Fleet Management with Mobile Technology



# Beyond the ELD Mandate

---

For logistics companies, complying with the electronic logging device (ELD) mandate is an obligation that leads to invaluable opportunities. By connecting the cab to the back office and to customers, fleets can enhance their performance and gain a substantial competitive advantage.

The ELD mandate has changed the face of in-cab technology and led many fleet operators to equip vehicles with powerful, versatile mobile devices. These ruggedized smartphones and tablets are connecting drivers, managers, customers and on-board systems with end-to-end applications that improve communications, reduce data entry and add efficiency to all kinds of business processes.

Mobile devices make it easy to meet the Federal Motor Carrier Safety Administration (FMCSA) regulations to record hours of service (HOS) duty status electronically. The mandate went into effect December 18, 2017, but the FMCSA delayed out-of-service orders for non-compliance until April 2018. There are exemptions to the rules that give fleets with older automatic onboard recording devices (AOBRDs) an extra two years to update to ELDs.

The FMCSA is quick to point out that the hours of service regulations have not changed; only the method of recording, storing and retrieving the information has been updated for the digital age.

The FMCSA has estimated some 500,000 U.S. trucking firms will have to comply with the mandate,<sup>1</sup> affecting more than 3 million truck drivers in the U.S.<sup>2</sup> It appears most fleets have achieved compliance, because the Administration reported in May 2018 that less than one percent of driver inspections resulted in a citation for operating without an ELD or a grandfathered AOBRD.<sup>3</sup> However, a recent industry survey shows that one-third of U.S. truck drivers are still using paper logs to track hours of service, despite the ELD mandate.

Organizations and drivers who have switched over to electronic logging have realized some real gains, though. Overall, 72 percent of ELD users said they are already recognizing some benefits of the systems, including 26 percent who reported fewer accidents and 43 percent who reported some savings on fuel.<sup>4</sup>

## If Your Fleet Has Adopted ELDs

If your fleet has already outfitted all vehicles with ELDs, congratulations. Now you have the capability to look beyond the mandate and add more functionality for your drivers and dispatchers. In addition to recording duty status, most ELD options include navigation and mapping, Driver Vehicle Inspection Reports (DVIR), International Fuel Tax Agreement (IFTA) administration and driver and vehicle performance monitoring. Add-on capabilities include electronic proof of delivery and other applications where data capture from typing or a stylus is desired. Fleets can leverage these capabilities to operate more efficiently while improving customer service.

## If Your Fleet Is Using Grandfathered AOBRDs

Trucks that have an automatic onboard recording device (AOBRD) are grandfathered in until December 16, 2019. AOBRDs are designed to record engine use, miles driven, dates and times, but they typically are not software-driven, multifunctional mobile devices.<sup>5</sup>

The FMCSA grandfather clause is intended to give AOBRD users extra time to make the device compliant with the ELD mandate or to replace it altogether. Depending on the age and technology of an AOBRD, it may be upgraded to meet the ELD standards, but fleet managers should be aware that limited device capabilities may hinder them competitively. If the AOBRD cannot be upgraded, switching to ELD will make it easier to address future regulations or required upgrades, since companies will be using more flexible devices.

In recognition of the financial investment required, the FMCSA regulations permit smartphones and tablets that are certified by their manufacturer as meeting the requirements to be used as ELDs.

These include basic options for operators that desire to do the bare minimum for compliance. By using certified, widely available mobile devices, fleets can offer drivers an easy-to-use platform that supports a wide range of functionality and will support ongoing technological developments.

Leveraging the power of mobile devices gives fleet managers the tools to tackle complex operations with variables in many areas, such as management, point of delivery and

maintenance and repair. The competitive advantage goes to fleets that leverage the powerful endpoint technology to drive improvements across all processes. Operators that settle for minimal compliance, meanwhile, will miss out on the long-term benefits of preparing their fleet for the future.

**This white paper will review the opportunities the ELD mandate and the mobile devices that manage it present for fleets ready to move beyond mere compliance to embrace the benefits that technology can deliver, and provide a roadmap for adapting to the future of fleet management.**

## FMCSA Compliance: Where do You Stand?

	Status:	Next Steps:
<b>You Have Met the ELD Mandate</b>	<p>Congratulations! You are compliant. Taking advantage of your ELD solutions' add-on capabilities can further increase your fleet's productivity and revenues.</p>	<p>Evaluate the service you are receiving from your ELD solution provider. Most ELD solutions include additional functionality that supports smarter navigation and mapping, digital proof of delivery, driver visual inspection records and IFTA reporting. Scaling to leverage these features will allow your fleet to do more and make deliveries as accurate as possible.</p>
<b>You Have AOBRDs</b>	<p>You have until December 16, 2019 to either upgrade or replace your devices to achieve ELD compliance. Finalize your implementation sooner rather than later to ensure a smooth transition for your fleet.</p>	<p>Consider implementing a mobile ELD system that provides the benefits of enhanced communication, record keeping and efficiency. Switching to a fully digital system now will make it easy to address future regulations or required upgrades.</p>
<b>You Are Non-Compliant</b>	<p>As of April 2018, you are at risk of drivers and vehicles being ordered out of service for non-compliance. On top of the resulting impact on revenues, fines for ELD violations could range from \$1,000 to over \$10,000 and negatively impact your CSA scores.</p>	<p>Do not keep your fleet at risk. Now is the time to look into affordable mobile solutions that ensure compliance, are easy to install and can provide additional productivity benefits.</p>

Learn more about mobile ELD solutions here: [samsung.com/eld-mandate](https://samsung.com/eld-mandate)

# Fleet Managers Are Empowered Like Never Before

With drivers, trucks and trailers linked by sensors collecting and transmitting data, mobile devices are the smart hub for the smart truck that can give transportation businesses greater control across the board.

Automated trucking fleet solutions are available on a number of commercial mobile devices, with minimal installations required. Some software can be deployed right out of the box, while others are designed for extensive customization for different applications and user roles.

While free navigation software can provide basic routing features, it lacks the deeper capabilities of purpose-built software. Such solutions typically provide essential safe driving information — such as maximum heights for bridges and road restrictions regarding hazardous loads. An out-of-the-box offering can help smaller firms and owner/operators create an effective IT infrastructure with minimal effort.

By tapping the power of telematics, trucking companies will be able to take advantage of data analytics from mobile devices within the vehicle as a competitive differentiator.

## Fleet and Route Optimization

Information to manage the fleet better — down to the individual driver and truck level — is at everyone's fingertips. Managers can make decisions based on the availability of assets that include a driver's working hours as well as truck and load locations.

Digital precision produces operational benefits that may not have been considered before. Using fleet telematics, dispatchers can be more disciplined. Both the driver and dispatcher have access to the same information about the driver's HOS, and they can both see if it makes sense to accept a load. Drivers can avoid getting routed to a load but running out of time on the way, for instance, or running out of time before a delivery is made.

ELD systems that interact with dispatching systems can also

populate load data such as shipper numbers and bill-of-lading (BOL) information to save drivers' time.

## Asset Tracking

In addition to a full set of fleet management and telematics solutions, fleets can deploy sensors that track truck movements, inventories, temperatures and performance — all in real time — and which are integrated with cloud capabilities and an Internet of Things (IoT) management platform.

These solutions are designed to provide real-time information to the driver as well as the fleet owner. For example, sensors in trailers can help alert both the driver and the fleet owner to temperature changes, avoiding damage to perishable items.

Private truck fleets, including merchandising trucks for food and beverage manufacturers, construction vehicles, municipal service vehicles and retail fulfillment, can also benefit from connectivity. Fleet telematics and IoT connectivity can boost asset utilization and customer satisfaction through improved service, as fleet management and other workflows converge and interact in a single device.

## Load Matching and Customer Communications

With mobile devices, drivers can connect with load matching services such as the Omnitracs Sylectus Alliance Network to claim loads to improve utilization rates dramatically. The load matching services pair available space with available loads. Truckers who use load matching apps report they increased from four loaded trips a week to five, boosting earnings and receiving payments more quickly.<sup>6</sup>

With hours of service and location data readily available, drivers can communicate with dispatchers better and reduce time spent on the phone. If a customer calls about a load, the dispatcher can access the truck's location via the online portal without having to call the driver, and then inform the customer of the driver's location and status for on-time delivery.

“Truckers who use load matching apps report they increased from four loaded trips a week to five, boosting earnings and receiving payments more quickly.”

# Managing Employees Is Easier

---

Driver retention and recruitment continues to be a problem for the industry. In fact, the American Trucking Association projects a shortfall of 175,000 drivers by 2024, and this is driving a bidding war between fleets to hire and retain good drivers.<sup>7</sup> Mobile devices can help fleets attract and retain employees with engaging, efficient tools that are widely used in both business and personal lives.

The devices can also help businesses manage drivers and other staff more effectively, because they can be loaded with apps for managing schedules, time off and payroll and tax issues.

Because there's such high demand for their services, truck drivers can be particular about where they work. They're looking at quality of life issues and building long-term relationships with their companies. Communication, training and personal wellness are some of the factors that drivers weigh when deciding where they'll continue to work.

In a recent survey, communications with dispatchers and driver recruiters were cited as the top factors in whether a driver would continue working with a company past the first three months. The survey from Stay Metrics, a provider of evidence-based driver feedback, found that 70 percent of driver turnover happens within the first year of employment, and 35 percent occurs within the first three months. The top three factors for early driver turnover were work conditions (such as pay, quality of equipment and facilities), company and management (for example, communication and respect shown to drivers), and lifestyle (for instance, their number of nights at home).<sup>8</sup>

One of the best ways to reduce early stage turnover, the survey found, is through high-quality recruiter/dispatcher communication. Connecting drivers with mobile devices creates a higher level of engagement across a breadth of activities, from recording daily hours of service, to dispatching and problem-solving, to training and off-duty activities such as exercise.

## Increasing Job Satisfaction

With telematics, fleets can address one of the top problems that drivers face: wasted time.

Before the ELD, logbooks were kept in increments of 15 minutes, but now status changes are recorded by the minute, which allows drivers to recapture several minutes of productive time each day.

In addition to basic hours of service compliance, a robust ELD solution can perform many other functions, including Driver Vehicle Inspection Reports (DVIR) and International Fuel Tax Agreement (IFTA) administration, as well as driver and vehicle performance monitoring.

For DVIR and IFTA, a mobile device can automate what had been paper processes to streamline data entry and reduce the risk of non-compliance. Electronic versions stored in the cloud also guarantee that paper records won't be lost.

## Improving Performance and Safety

Sensors on trucks can measure vehicle operations and driver behaviors in real time. On an individual and aggregate basis, managers are able to monitor how drivers operate their vehicles: Are they harder than average on brakes? Do they waste diesel accelerating too quickly? Based on fleet data, the management system can recommend best practices for routing and driving habits. Using the telematics data, drivers can participate in company-sponsored contests to incentivize driving efficiencies, perhaps including reward systems for drivers who exceed their goals.

Better information about driver performance can help create a culture of safety. Bad habits such as hard braking and speeding can become safety and compliance issues for the entire fleet. When driving is monitored, drivers are more likely to perform according to company and regulatory standards, leading to fewer accidents and law enforcement encounters and lower insurance costs.

## Enhancing the Driver Experience

As fleets deploy mobile devices to meet the ELD, there's also significant potential to use these same devices to improve the driver experience on the road and during breaks. By equipping your fleet with a tablet-based ELD, you're providing a popular employee perk and a powerful work tool for use when not on the road.

Drivers have grown comfortable using smartphones and tablets for communicating with family and friends, personal banking, games, entertainment and many other daily activities. They're accustomed to using touch screens with minimal typing, and fleets can improve their satisfaction and task performance by installing the same type of technology in the cab.

Retention has always been a challenging aspect of fleet management, but an effective device policy that provides some connectivity to drivers can help mitigate turnover.

Drivers can use the devices off-duty for movies, games and communicating with family and friends. A trucking fleet may also be able to attract younger digital natives to the driver corps with the promise of a mobile device for personal use.

It also, however, brings with it a considerable security challenge for companies with ultra-mobile employees, like those with managing trucking fleets in the transportation sector. IT staffs need to ensure a Virtual Private Network (VPN) and containerization of data is established on each device as constant travel opens vulnerabilities such as lost or stolen devices or unsecured Wi-Fi connections.

Given the non-conventional schedules followed in the transportation industry, a security protocol that works to protect business data needs to be an “always on” solution, but still offer enough flexibility for the user to engage with personal applications during non-work hours.

With Knox Platform for Enterprise, business applications and data can reside in an encrypted secure container while still working in tandem with MDM solutions. Additionally, Knox Platform for Enterprise supports enterprise-level VPNs, so IT administrators know data being transmitted from the field back to the corporate team is traveling through a secure pathway, while also providing a separation from personal applications if the user accidentally taps into an insecure connection.

While businesses are concerned about the safety of their critical information, the transportation industry brings with it a need for physical safety as well. While company policies and public safety laws prohibit drivers from using handheld devices while operating vehicles, not everyone abides by the rules. With Knox partitioning business and personal data in a scheduled format — creating the inability to access non-work-related information during scheduled business times — the risk of a user engaging with a smartphone or

tablet while driving is minimized as a result. The same would go for a user tapping into Wi-Fi locations during work hours; the device can be configured to only allow personal usage when the secured business container is fully closed and “off the clock.”

## Flexible Training

Mobile devices allow drivers to participate in training exercises wherever and whenever they choose. A driver might review a safety video while resting in the sleeper or get a refresh on the right way to inspect a bumper while standing right beside it.

At least one large carrier fleet has added training videos for inspections and other procedures that drivers can access anytime, as videos are more likely to be consulted than a thick instructional manual. A large fleet may train several hundred new drivers per week, so having everyone follow the same procedure for connecting the truck and trailer makes sense. Additionally, mobile devices have a familiar user experience, so there's a minimal learning curve when it comes to operating them.

## Improving Driver Wellness

Wearables can also play a role in driver health and performance, with the ability to monitor driver sleep habits, improve safety and provide tools for workouts. Skimble, for example, has created Active Trucker workouts for its Workout Trainer App, available for phones and tablets. Paired with a Samsung Gear S3 or Gear Fit wearable, the workouts sync with the phone or tablet. The display on the Samsung wearable shows useful prompts at a glance during workouts, like the current exercise name, timing and repetition cues, as well as handy exercise tips.

The exercises are designed to reflect the daily reality of life on the road to help promote truck driver wellness, and the videos feature demonstrations by a driver at a trucking facility or a truck stop. According to Skimble, one group of drivers lost an average of 8 pounds using the workouts.

“Connecting drivers with mobile devices creates a higher level of engagement across a breadth of activities, from recording daily hours of service, to dispatching and problem-solving, to training and off-duty activities.”

# Secure Your Data and Manage Your Devices

---

Any fleet that deploys mobile devices must account for device security in order to protect company and customer data. It's important to choose tablets or smartphones that are protected from the chip up. Samsung mobile devices, for example, ship with built-in Knox security, which delivers defense-grade, multilayered protection. The platform ensures application and device security in an enterprise-ready system that defends against malicious attacks targeting the device, software and data moving between the device and the internet.

Samsung Knox protection is available for small and large enterprises. Knox Platform for Enterprise enables containerized workspaces that create separate work and personal user identities on the same device. With that sandbox capability, a fleet can create a corporate space for all approved applications, while a personal space allows the driver to access their entertainment and communication apps without intermingling data.

Knox Platform for Enterprise creates a secure path to connect to the corporate network environment from their personal or corporate-owned devices. For personal use, drivers may be responsible for their own Wi-Fi access, so Knox can keep corporate data safe, even if the network is not fully secure, and can also neutralize malware attacks. Corporate data can be wiped off a device remotely in the event it is lost or stolen, while leaving personal data intact.

## Enterprise Mobility Management

For the IT staff, an enterprise mobility management (EMM) tool such as Knox Premium or Knox Manage offer other important opportunities. The Knox Premium option enables simple device management using a cloud-based platform

that creates a secure container on an enabled device. Knox Manage is a cloud-based EMM solution that provides a simple deployment process to help address security concerns for an organization's device fleet, without having to invest the cost and time to build a dedicated infrastructure.

Both Knox Premium and Knox Manage provide a cloud-based command center to manage devices across multiple operating systems remotely. This adaptability ensures sensitive data — from corporate emails to customer records and financial information — stays secure, regardless of the device operating system. Devices can be remotely locked or wiped if one is lost or stolen.

Both systems control access to websites and apps through whitelisting and blacklisting to manage data usage and employee access to unauthorized sites. With Knox Manage, a kiosk mode can lock down the device to allow the use of approved websites without access to the internet at large.

Knox allows IT managers to segment users by groups or policies to allow access to specified apps or websites or other functions that aren't required by the entire enterprise. This allows fleets to create different workgroups and deploy unique application sets to each one. Applications and updates can be managed remotely to push access as needed by groups or individuals.

Many transportation companies have a strong business case for customized applications, building tools that fit their workflow and business strategies. With the Android platform, Samsung mobile devices offer an open development environment that enables comprehensive customization. Companies can develop custom apps and distribute through a private online store or push them out via Knox Manage and Knox Premium.

# Improving the Last Mile

From the trucking customer's point of view, the first and last miles usually matter the most. A high level of performance in the last mile is essential for delivery success.

The last mile may also be the toughest on mobile devices. That's where ruggedized commercial grade options such as the Samsung Galaxy Tab Active2 really shine. The Tab Active2 addresses concerns about durability when devices are removed from the cab. Its military-grade design can withstand harsh conditions including drops, altitude, extreme temperatures, immersion, salt, fog and blowing dust. MIL-STD-810G testing and IP68 certification attest to the durability of the device.

The Galaxy Tab Active2 also includes a full HD display and high-resolution cameras front and back. It also offers biometric authentication options such as fingerprint

scanning for greater security, and facial recognition for a convenient, unlock-with-a-look experience.

Due to their familiarity with devices, drivers can easily be trained to track orders, capture signatures, reconcile returns and perform other tasks, instead of maintaining a paper manifest. The Galaxy Tab Active2 reduces risk of damage with a water-resistant, IP68-certified S Pen, which allows drivers to use their devices even while wearing gloves. While the S Pen looks and feels like a typical pen, it enables team members to easily jot down digital notes, sketch ideas or capture signatures.

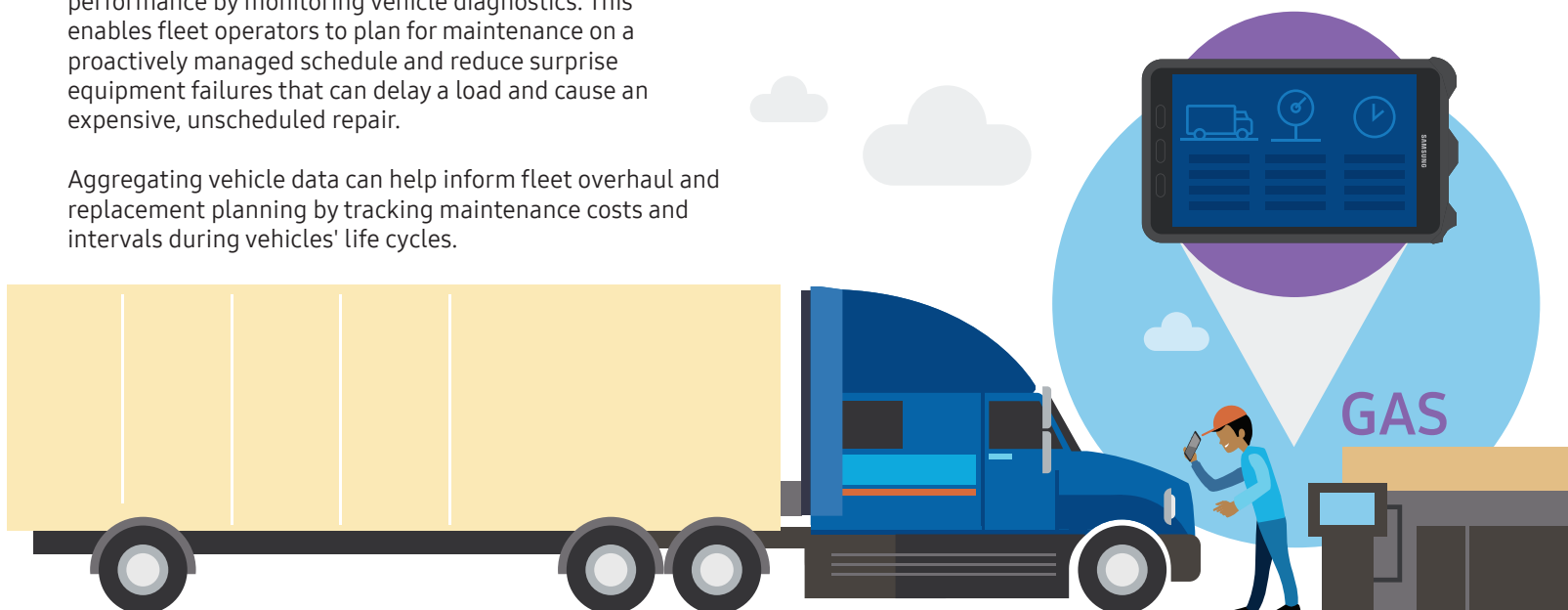
Matched with a scanning device and the appropriate apps, mobile devices like the Tab Active2 can provide on-the-spot signature capture and tracking information for immediate customer notification and verification.

# Improving Repair and Maintenance Efficiency

The connected truck can also enhance vehicle communications to improve repair efficiency and vehicle uptime. Vehicle sensors monitor and deliver alerts about engine problems and other diagnostic issues while informing dispatch when the vehicle is out of service. With this data forwarded from the ELD, managers will be equipped to plan for maintenance based on actual performance by monitoring vehicle diagnostics. This enables fleet operators to plan for maintenance on a proactively managed schedule and reduce surprise equipment failures that can delay a load and cause an expensive, unscheduled repair.

Aggregating vehicle data can help inform fleet overhaul and replacement planning by tracking maintenance costs and intervals during vehicles' life cycles.

The DVIR can help manage a fleet's CSA score with an inspection record confirming compliance over the long term. With a mobile device, the DVIR can be monitored and reviewed by management to ensure compliance with regulations and company standards. Managers can use the information for coaching and training drivers remotely. Distance isn't a barrier for communications anymore.





# Mobile Devices as the Platform for Progress

---

Forward-thinking fleet managers recognize that the ELD is only an entry point into a new world of fleet telematics. By going beyond the basics of the ELD mandate, fleet managers have the opportunity to turn trucks into computers on wheels, connecting to cellular networks to send data to and from the vehicle.

With smartphones and tablets serving as the driver interface, fleets can deliver intelligent business processes to every endpoint in the fleet: the vehicle, the driver, the maintenance shop and the point of delivery.

Strategic analytics guide companies in making investments and policy changes for mid- and long-term improvements in

efficiency, risk reduction and profitable growth, while tactical analytics gives a company insight to optimize daily decisions across the supply chain.

Rugged mobile devices can stand up to the rigors of everyday commercial use — drivers conducting daily inspections, communicating with a dispatcher and capturing delivery signatures. They quickly become an integral tool for daily activities that drivers and managers value for conversion of manual processes to easy-to-use digital interaction.

With rugged form factor devices, drivers can use one tool for all their tasks, managing pickups and deliveries, navigation and other fleet management functions.

# Wearables for Task Management

---

Wearables such as smartwatches are another fleet technology that's primed for broad adoption. Paired with an in-vehicle tablet or smartphone, a smartwatch can deliver priority work tasks through a simple interface for any employee whose primary job responsibilities require hands-free access to data.

For example, Hipaax, a Samsung Enterprise Alliance partner, offers TaskWatch, a platform for smartwatches that delivers hands-free access to data for logistics and transportation use. Receiving notifications via wearables accelerates employee response time and improves communication among employees and managers.

Delivery drivers who make frequent stops can send and receive messages while they're out of the truck. Managers can collect and deliver real-time insight into the location of

loads, and drivers can also provide information on load delivery, load pick-up and any in-transit problems.

Wearables can also be leveraged for their health monitoring capabilities to improve driver safety. Built-in sensors on Samsung wearables detect physical position and activity, which can enable important health status alerts. This means that fleet managers or dispatchers can know where a driver is on their route and react accordingly if alerted that a driver is in distress or has fallen on the job.

# Conclusion

---

The future of fleet telematics is bright for all types of fleets. The transportation industry remains ripe for technological disruption that improves efficiency and customer service as well as the driver experience. Ultimately, outfitting trucks for gathering telematics can help companies, drivers and managers be smarter and more efficient throughout the transportation workflow.

Certainly, some investment is required for hardware and software, and changing traditional ways of working can be challenging. However, like many other technology products, the return on investment will be brisk as prices for components such as sensors and connectivity continue to deliver a high level of value.

Any fleets that don't take advantage of mobility and IoT will be isolated from vital data such as performance and maintenance, as well as the possibility of connecting with loads and shippers with lower overhead. If it's not already, it will be practically impossible in the next few years to succeed in the trucking business without a robust fleet management solution.

---

Learn more: [www.samsung.com/eld-mandate](http://www.samsung.com/eld-mandate)

# Footnotes

---

1. Truckers Grapple With Switch to Electronic Logs. Clarissa Hawes. Trucks International. Nov. 29, 2016. <https://www.trucks.com/2016/11/29/electronic-logging-devices-truckers-switch/>
2. Trucking Groups Weigh in on ELD Mandate, Major Groups Split on Group's Efficacy. Matt Cole. Commercial Carrier Journal. December 14, 2015.
3. FMCSA Provides Updates on ELD Efficacy. Chad Prevost. FreightWaves. June 28, 2018. <https://www.freightwaves.com/news/driver-issues/fmcsa-provides-updates-on-eld>
4. A Third of Fleets Still Use Paper Logs, Despite ELD Mandate. Emma Cosgrove. Supply Chain Dive. August 31, 2018. <https://www.supplychaindive.com/news/fleets-not-using-ELD-data-survey/531410/>
5. AOBRDs vs. ELDs: The Key Differences. Peoplenet. September 25, 2017. <https://www.peoplenetonline.com/aobrds-vs-elds-highlighting-some-key-differences/>
6. The Appy Trucker. The Economist. March 3, 2016. <http://www.economist.com/news/business/21693946-digital-help-hand-fragmented-and-often-inefficient-industry-appy-trucker>
7. Truck Driver Shortage Analysis. Bob Costello and Rod Suarez. American Trucking Association. October 2015. <http://www.trucking.org/ATA%20Docs/News%20and%20Information/Reports%20Trends%20and%20Statistics/10%206%2015%20ATAs%20Driver%20Shortage%20Report%202015.pdf>
8. Is Early Turnover Damaging the Business? Timothy Judge, Ph.D., and Shu-Tsen Kuo, MA. Stay Metrics. July 2018. <https://staymetrics.com/wp-content/uploads/2018/07/Early-Stage-Driver-Retention-Turnover-Whitepaper.pdf>

© 2018 Samsung Electronics America, Inc. All rights reserved. Samsung is a registered trademark of Samsung Electronics Co., Ltd. All products, logos and brand names are trademarks or registered trademarks of their respective companies. This white paper is for informational purposes only. Samsung makes no warranties, express or implied, in this white paper.

---

Learn more: [samsung.com/transportation](http://samsung.com/transportation) | [insights.samsung.com](http://insights.samsung.com) | 1-866-SAM4BIZ

Follow us:  [youtube.com/samsungbizusa](http://youtube.com/samsungbizusa) |  [@samsungbizusa](https://twitter.com/samsungbizusa)

**SAMSUNG**