Rethinking electronic logging device (ELD) for a more user-friendly driver experience

Improving driver efficiency, productivity and safety through a redesigned display unit for optimal usability

SUMMARY

A leading provider of fleet management solutions required an electronic logging device (ELD) that can communicate real-time with its central command and control center whilst providing personalized driver experience for behavior-based self-monitoring. The device must be user-friendly and highly functional, and must be properly secured in place when the vehicle is moving. To improve driver's usability, we attached a full-sized retractable keyboard and incorporated telematics—all within the form factor of an ELD. And with our design and development expertise coupled with our know-how in product qualification and certification, our partner managed to launch a first-of-its-kind ELD to market at record time which became one of its top selling products.

THE CHALLENGE: MAKING A USER-FRIENDLY ELECTRONIC LOGGING DEVICE (ELD) FOR DRIVERS ON THE MOVE

A user-friendly ELD to provide drivers with high level of usability which incorporates telematics

Drivers today face a growing number of administrative duties on the road. Whilst telematics is now an integral component of fleet management, drivers need an ELD that can do more than GPS navigation and route optimization. A user-friendly ELD that can exchange real-time information and data with the central command-and-control center while enabling ease of management and configuration of task lists will provide drivers with the usability they need on the move. Apart from boosting driver's efficiency and productivity, a user-friendly interface can help cut back on stress and improve concentration, leading to enhanced safety.

A top provider of fleet management solutions required an ELD that features a user interface that incorporates a full-size keyboard to allow ease of use for their drivers without compromising on size. The keyboard is to be highly functional and must be properly secured in place when the vehicle is moving. The ELD is to exchange real-time communication with the central fleet management system whilst providing a high level of usability for drivers.

THE SOLUTION: RETRACTABLE SLIDING BACKLIT KEYBOARD FOR OPTIMAL USABILITY

Retractable and sliding full-size backlit keyboard attached to the display unit which can be hidden away when not in use

Leveraging our expertise in Human Machine Interface (HMI), we designed and incorporated a retractable and sliding full-sized keyboard to the display unit. The keyboard can be securely locked and positioned underneath the LCD display when it's not in use via a locking mechanism built on the slider. The keyboard was designed with backlight function which helps illuminate its letters and symbols on its keys to make them visible in low light environment—enabling usability without having to depend on alternative light sources.

To facilitate real-time communication exchange with its command-and-control center, we worked with our partner on incorporating telematics into the unit. This provides GPS navigation, route optimization, driver behavior analytics, and more importantly, allows real-time data and information exchange to take place which can be used to improve tracking accuracy, and operational efficiency and productivity.

> "PCI demonstrates extensive expertise in software and hardware engineering and has the competencies to quickly bring products to market. Their engineering and manufacturing support continues through the entire product lifecycle even after products are launched, also providing reverse logistics and end-of-life tracking. This allows us to focus on feature enhancements and strategic product planning. PCI's lean manufacturing process has allowed us to remain competitive in price in a market that's characterized by extremely tight margins. They continue to achieve product cost targets and provide year-over-year cost-savings for us."
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> *- Leading provider of fleet management solutions*

THE RESULT: FIRST-OF-ITS-KIND ELD LAUNCHED AT RECORD TIME-TO-MARKET

11 months from product design to market launch

First of its kind ELD incorporating retractable keyboard in its display interface in the fleet management industry

Incorporating the retractable keyboard with the display unit, our partner was the first to introduce this ELD that was unlike any other in the fleet management industry. With our expertise in conformity assessment to quickly validate the ELD's safety and functionality including rigorous testing and inspections, our partner managed to launch the ELD to market at eleven months—a process which would have otherwise taken longer—where it subsequently became one of its best-selling products.

To date, we continue to work with our partner in building state-of-the-art ELDs featuring touchscreen virtual keyboards for customers within the fleet management telematics industry.

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