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Simon Comerford, Mechanical Engineer, Ashwoods Automotive

Ashwoods Automotive: Lightfoot



A young, dynamic and visionary company, Ashwoods Automotive Ltd is a leading UK based design and engineering company, combining cutting-edge innovation with an astute understanding of its customers' needs

Ashwoods Automotive designs and develops award-winning market-driven engineering solutions. It is the UK's leading supplier of Hybrid commercial vehicles and has successfully developed their own technology to produce components such as electric motors and battery packs.

The Challenge

After successfully expanding into components for hybrid vehicles, Ashwoods Automotive recognised growing demand from their customers for an interactive driver solution. Customers wanted a system that would monitor and interact with the driver's behaviour while at the same time retaining telematic data to provide fleet managers with a snapshot of driver performance and key metrics.

The Solution

Using SOLIDWORKS, Ashwoods Automotive began work on Lightfoot, a simple system that modifies driver behaviour by working in-vehicle with the driver. Mechanical Engineer Simon Comerford needed to design Lightfoot's in-cab display unit that would alert the driver through audible and visual guides.

“A display had to be built into the cab and over the last 18 months it has morphed into the Lightfoot system,” says Simon. “Aesthetics played an important part in the design. All the parts were designed in SOLIDWORKS and these files were used throughout, right from the initial conceptual meetings with our director, all the way to sending out the CAD models for the injection moulded parts.

“Aesthetics were an important consideration because the casing had to fit the electricals and yet sit discreetly mounted to the vehicle's dashboard. It's always a trade off between mechanical and electrical. The electrical team wanted as much space as they could possibly have, while we wanted to slim the casing down as much as possible. In the end we were able to deliver a product that delivered on both fronts.”

The Challenge

A growing demand from their customers for an interactive driver solution, gave Ashwoods Automotive the idea for a system to monitor and interact with a driver's behaviour.

"The trickiest part was making sure the parts fitted together. Being able to offer CAD data to other companies in the form of a compatible SOLIDWORKS 3D CAD file was a massive help in getting manufacturing quotes for the parts quickly."

Simon says SOLIDWORKS also helped them react quickly to any design changes. "There were numerous versions in development and SOLIDWORKS let us update and improve the design with ease. It is a good intuitive package and is key in helping us produce new and innovative products such as Lightfoot, very quickly."

The Results

Thanks to SOLIDWORKS, Ashwoods Automotive were able to react quickly to market demand. By responding to customer requests for a new driver interactivity solution, they were able to accelerate development design time, introducing an innovative product to the market in record time.

By delivering proven fuel and CO₂ savings of over 10 per cent by improving and sustaining driver behaviour - Lightfoot was shortlisted by the Low Carbon Vehicle Partnership for the category of Low Carbon innovation by an SME 2015.

And it is already becoming well-established in the fleet sector. Having been trialled by several UK companies, it is being used in 10,000 vehicles with predicted growth of 50,000 units by 2016.

"Lightfoot spells the end for traditional vehicle telematics by proactively fixing driver behaviour in the vehicle by combining real-time voice feedback with Formula 1 style engine data analytics," explains Simon.

"Rather than winding the user up, Lightfoot works in partnership with drivers. It encourages a culture of good driving," says Simon. "We are even seeing some companies start league tables, rewarding drivers who have made the 100 Club (sustaining a 100 per cent driving record) or the top three performances."

In 2016, Ashwoods Automotive will launch Lightfoot to private motorists, which the company believes will change both the automotive and the insurance markets. Insurance companies will purchase Lightfoot for young drivers as part of their insurance policy, while experienced drivers will purchase Lightfoot in order to reduce fuel bills and demonstrate their driving ability to themselves, their insurers and their peers.

Following six months of intense research and design, Ashwoods Automotive has also been able to expand the product line with the Lightfoot Dash Cam. "The beauty of SOLIDWORKS is that it lets us react to changes easily and enables us to develop Lightfoot into new markets quickly," says Simon.

At the end of 2015, the company launched the Lightfoot Dash Cam - one of the smallest and most discreet in-vehicle cameras available. Insurance approved, the Lightfoot high definition vehicle camera automatically records the road ahead in case of an incident. It is being hailed as the next generation of in-vehicle fleet camera systems.

New Technology CAD/CAM

"The technical support we receive from New Technology CAD/CAM is superb," said Simon. "They usually sort any queries we have over the phone, but if they can't they will work on it and always get back to us with a solution. I have never yet been able to stump them."

Benefits:

- Full design solution from concept to manufacture with SOLIDWORKS
- Accelerated development time
- Design changes made easy
- Ease of file sharing
- Reduced downtime with technical support from NT CAD/CAM

Industry:

- Automotive and Transportation

Product Used:

- SOLIDWORKS Premium
- SOLIDWORKS Professional



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