BF Goodrich tire design testing shifts into high gear

Enterprise: BFGoodrich Tire Company

Industry: Automotive

Application: Data collection to measure tire performance under extreme race conditions

Profile: BFGoodrich Tire Company, based in Greensville, SC, has led industry innovations in street and performance tires since the company's founding in 1896.

When the scent and sound of burning rubber fills the air at automotive racetracks, members of the BFGoodrich (www.bfgoodrich.com) tire design group are waiting in the pit alongside the race team's mechanics. When the company's Trans-Am race car makes a pit stop, design team members rush in to measure temperatures and pressures of all four tires. They combine that information with lap time, track temperature, and weather data to analyze how well the tires are holding up — learning valuable lessons that the manufacturer uses to improve its next-generation tires.
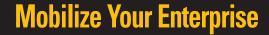
Until recently, the process of collecting tire performance data kept cars idling in the pit longer than desired. Individual team members checked each tire's temperature three times, hurriedly scrawling results by hand on a clipboard in the few minutes before the tire cooled off. After each day of racing or test laps, they spent up to three hours typing results into a laptop computer.

The design team considered laptops for data entry, but ruled them out as too expensive, too large, and too fragile for the hectic racing pit. That's when they turned to portable, economical Palm™ handhelds — already owned by many of the engineers. Recording temperature and pressure gauge readings on Palm III™ handhelds and Satellite Forms software from Puma Technology, team members now enter data using pull-down menus, saving a precious five to six seconds per tire during pit stops. But the real time savings comes from using Palm HotSync® technology to transfer data to a Microsoft Access database on the company's global network, saving the design team hours of data entry.

Engineers further accelerated the process when they discovered Versid Temperature Acquisition Module from Tangent Systems, which allows engineers to attach test probes directly to Palm handhelds for automatic temperature and pressure readings. By eliminating manual data entry altogether, the Palm/Versid system shaved testing time from minutes to seconds a vital increase in productivity and cost savings, particularly at test tracks which cost as much as $10,000 a day to operate.

"We're now able to spend our time on more important issues, rather than just data capture," said race tire designer Matt Forthofer. "The results collected during races helps us to better understand what it takes to win a race and ultimately, build a better performance tire for the consumer."

During the 1999 racing season, the entire BFGoodrich racing team will carry Palm III or Palm IIIx™ handhelds coupled with Versid units, collecting data throughout the racing season. Ultimately, the new solution is enabling BFGoodrich to fully leverage performance information to develop better, safer tires — for racers and consumers alike.

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