

Lockheed Martin Autonomous Car Takes A Lap At The Toyota Grand Prix

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Most people don't go to auto races to see cars parade around the track in single file at 30 miles an hour. Then again, most race cars include drivers.

Lockheed Martin Racing Team's autonomous car joined two others at the Toyota Long Beach Grand Prix on April 20 for the first ever Robotic Grand Prix. While not technically a race, the cars demonstrated to 180,000 race fans that robotic cars can successfully run a lap around the challenging track without human intervention, guided only by their on-board sensors and software.

Before the autonomous demonstration, Lockheed Martin displayed its car at the Toyota Lifestyle and Alternative Energy Expo. Race fans had the opportunity to see the car and talk with some of the engineers who developed the car's robotics technology, which enabled the vehicle to successfully complete the 1.97-mile circuit, which includes 11 turns.

"We are proud to introduce our car to a group of race fans who may never have expected to see Lockheed Martin or robotic cars at the Grand Prix," said Project Manager Brian Satterfield, Lockheed Martin Advanced Technology Laboratories (ATL). "This isn't science fiction; it's reality. We want to help people better understand how robotics and autonomous technology are becoming an increasingly important part of everyday life."

ATL's Robotic car, a red Toyota Prius hybrid, was the Ben Franklin Racing Team's backup vehicle during a November 2007 event called Urban Challenge, sponsored by the Defense Advanced Research Projects Agency (DARPA). In that event, robotic automobiles had to intelligently and safely drive themselves through a 60-mile urban course in less than six hours. The cars had to obey traffic laws while merging into moving traffic, navigating circles, negotiating intersections and avoiding obstacles.

Of the 89 teams that initially entered the 2007 DARPA Urban Challenge, only 11 qualified to compete in the final competition. The Ben Franklin Racing Team, a consortium led by the University of Pennsylvania with Lehigh University and ATL, was one of only six teams to have a vehicle successfully complete the final race.

Since the competition Lockheed Martin engineers have updated and improved their car's software, giving the vehicle the ability to autonomously navigate complex environments, often in close contact with humans or manned vehicles, and exhibit intelligent and complex behaviors. They are transitioning this technology into the Squad Mission Support System, an unmanned off-road vehicle that Lockheed Martin Missiles and Fire Control is developing for the U.S. military.

Headquartered in Bethesda, Md., Lockheed Martin employs about 140,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services. The Corporation reported 2007 sales of \$41.9 billion.

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