

Carnegie Mellon robots with pass finish line

Both Red Team Vehicles in the Top 3 at the DARPA Race

Brixen, Italy and Primm, Nevada, USA – October 13, 2005

Two Red Team autonomous robotic vehicles, each equipped with TTControl technology, finished the 132-mile (230-kilometer) course of the DARPA Grand Challenge Race on October 8th. Both robots performed superbly. Red Team's veteran Sandstorm took 2nd place and H1ghlander was 3rd. The 2-million dollar prize money went to the Stanford Racing Team. The Red Team robotic vehicles and the winning Stanford Racing Team were judged to be extremely close.

The DARPA Grand Challenge is a US government-sponsored contest that aims to create the first fully autonomous, independently-acting vehicles.

From among 195 original applicants for the race, DARPA narrowed the field to forty-three semifinalists through a series of qualifying events. The finalists at the starting line on October 8th were selected after the National Qualification Event, which is an intense eight-day semifinal competition.

The race took place in the Mojave Desert near Primm, Nevada. Twenty-three vehicles started, but only five teams actually arrived at the finish line. The three leading driverless robots approached the finish line at almost the same time. Stanford Racing Team's Volkswagen Touareg took six hours and 53 minutes; Sandstorm trailed by 11 minutes and H1ghlander by another 10 minutes.



“Sandstorm was a surprising second, because its strategy was to creep for a reliable finish”, stated Red Team leader William “Red” Whittaker. “Sandstorm was sent forth with a conservative plan, understanding that it would operate well below its peak abilities.” Second place and a race time of seven hours and four minutes is therefore a significant success for the team. Red Team's H1ghlander, the new entry for this year's race, had been set up to cruise for an easy win. It started from the pole position and led the field for the first five hours.

The technology developed for the Grand Challenge will open doors for autonomous mobile robots. The Red Team vehicles are outstanding complex high-tech machines using "drive-by-wire" technology, in which on-board computers control all relevant vehicle movements. TTControl products provide the basis for the control systems.

TTControl's fault-tolerant communication network, based on the Time-Triggered Protocol TTP[®] ensured safe data communication between the high-tech controllers during the race. TTP supports very high data rates and fulfills the requirements of hard real-time systems. Embedded controls that require precise timing and high throughput are successfully implemented with TTControl products. TTControl products are the most reliable and efficient solutions for such systems, and were chosen by the renowned Red Team engineers.

About Red Team

The Red Team consists of a group of Carnegie Mellon University faculty, staff and students who are supported by the generous contributions of non-profit organizations, for-profit companies, and individuals. The Red Team and its contributors are all united by the goal of winning the DARPA Grand Challenge, and by so doing, substantially advancing the state-of-the-art in autonomous ground vehicles. Red Team operates under the auspices of the Robotics Institute of Carnegie Mellon University, a world leader in the development of mobile robotics. Robots designed at Carnegie Mellon have traversed Antarctica and the Atacama Desert in Chile, explored abandoned mines, and scaled active volcanoes.

Further information on Red Team is available at www.redteamracing.org.

About TTControl S.r.l.

TTControl offers electronic control systems for special vehicles, such as agricultural and construction machinery, fork lifts, cranes, and snow groomers. TTControl's software and hardware platforms enable manufacturers of special vehicles to develop reliable electronic control systems quickly and economically. TTControl is a subsidiary of TTTech Computertechnik AG.

Further information on TTControl is available at www.ttcontrol.com.

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