



# DARPA Urban Challenge

*Team Cybernet - Ann Arbor, MI*

The DARPA Grand Challenge robotic vehicle competition has captured imaginations around the world. The innovations, memorable personalities, life-saving technologies, and sheer magnitude of the 2004 and 2005 Grand Challenges have generated worldwide news coverage, with hundreds of media outlets reporting on history in the making.

## The Challenge

Fifteen autonomous ground vehicles attempted the first Grand Challenge, on a 142-mile desert course between Barstow, California and Primm, Nevada in March 2004. None finished the course and the \$1 million cash prize was unclaimed. Eighteen months later, four autonomous vehicles successfully completed a 132-mile desert route in southern Nevada under the required 10-hour limit, and a \$2 million prize was awarded.

The 2007 Urban Challenge builds on the excitement of the first two Grand Challenges to accelerate the development of autonomous vehicles that will someday perform hazardous tasks on the battlefield with limited human involvement, but the third Challenge features an added twist.

To succeed in the Urban Challenge, teams' robots must perform like cars with drivers and safely conduct simulated battlefield supply missions on a 60-mile urban area course. They must obey traffic laws while merging into traffic, navigating traffic circles, negotiating busy intersections and avoiding obstacles in fewer than six hours. The urban setting adds considerable complexity to the challenge faced by the robotic vehicles, and replicates the environment in which many of today's battlefield missions are conducted. The Urban Challenge 2007 will take place at a location in the western United States that will be announced in August 2007. Teams will qualify for the main event in the National Qualification Event, October 21-31, 2007.

## Team Cybernet

Team Cybernet is creating low-cost navigation and behavior subsystems that leverage COTS automotive technology. Our goal is to demonstrate a technology that can be rapidly and directly inserted into the Army's existing fleet of medium tactical trucks (FMTV). The result will be a low cost (~10% of vehicle cost) automatic driving system suitable for both Light and Medium-class vehicles typically used in convoy operations.

Team Cybernet is led by Cybernet Systems Corporation of Ann Arbor, MI and features other prominent Michigan companies and Universities as partners, including Lawrence Technological University, Applied Research Associates, Sparton Corporation, Michigan Technological University, and the University of Michigan, Michigan State University, Soar Technology, Stewart & Stevenson, Ford Motor Company, and DaimlerChrysler.

