

1999 Unmanned Vehicle Contest

The 7th International Ground Robotics Competition (IGRC), co-sponsored by SAE, is scheduled for June 5-7, 1999, at the Oakland University in Rochester, Michigan. The competition, open to all engineering schools, requires student teams to build autonomous golf cart or smaller size and race them over a 600 foot winding obstacle course. The course consists of a ten foot wide lane with white lane markings on grass, and white five-gallon buckets and orange construction barrels serving as obstacles spaced along the lane. There are also a ramp, a section of simulated asphalt, and a sand pit that have to be negotiated. The 1999 the contest will also include a two separate bonus events. One consists of a 200 foot course varying in width from six to ten feet strewn with real debris (tire rubber, tailpipe, dead skunk, etc.) The second bonus event is a Follow-the-Leader challenge in which the autonomous vehicle must follow a lead vehicle on an unmarked course while maintaining constant headway. The design competition, run in conjunction with the performance competition, and in which all teams are required to participate, involves judging of a ten page written report, a ten minute oral presentation, and a visual inspection of the vehicle.

Qualifications and practices runs, along with judging in the design competition, are on Saturday and Sunday, and the performance contest is run on Monday. Prizes include \$5,000, \$2,000, and \$1,000 for first, second, and third place in the performance competition; and \$1,000, \$600, and \$400 for first, second, and third place in each of the design and bonus competitions. Prospective new teams might want to send

an observer the first year.

The 6th International Ground Robotics Competition in 1998 had fifteen teams participating, including Hosei University from Tokyo, Japan, and the University of Alberta, Canada. The winner in the main performance contest was the team from Colorado Denver; Oakland University won the bonus event, and Virginia Tech won the design competition. Various technologies have been used but most common are a video vision system to locate the lane markings, ultrasonic detectors to locate the obstacles, and computers to analyze and integrate the sensor data and control the speed and steering. In 1998, one vehicle used an internal combustion engine; the rest were electric powered 3, 4, or 6-wheeled vehicles. Two vehicles were based on electric wheelchairs.

Co-sponsors, along with SAE in 1998, were the Association for Unmanned Vehicle Systems International (AUVSI), Oakland University, the U.S. Army Tank Automotive Command (TACOM), Fanuc Robotics, Inc., and United Defense, Inc.

For additional information, contest rules, and entry forms see the IGRC website at: http://www.secs.oakland.edu/SECS_prof/PROF_AUVSI/index.html or contact any of the following:

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