Urban Challenge Final Event

Southern California Logistics Airport
Victorville, CA

Welcome to the DARPA Urban Challenge Final Event!

The Urban Challenge accelerates the development of autonomous ground vehicle technology that can someday be used to save lives on the battlefield. It is also designed to inspire youth to pursue careers in science, technology, and engineering.

Eleven teams were selected as finalists out of the thirty-five semifinalists.

The vehicles selected for the final event demonstrated driving proficiency in turns into moving traffic, 4-way intersection movement, navigation to a destination even when roads are blocked, parking, and obstacle avoidance.

The willingness and dedication of all of the teams to solve an important technical challenge and their commitment to success mark them all as winners.

Today, the finalists will be given three missions to complete that are each approximately 20 miles long. All three combined must be completed in less than 6 hours while adhering to California driving rules. The traffic they encounter on the road will be both human-driven and the other finalists' robotic vehicles.

I extend a special welcome to the spectators and thank the sponsors who have helped the teams reach this important stage. Good luck to all the teams!

-Dr. Tony Tether, DARPA Director

The Urban Challenge

The Urban Challenge is designed to accelerate the development of autonomous ground vehicle technology for operations in an urban traffic environment. DARPA is offering three prizes—$2 million, $1 million, and $500,000 — to the top three vehicles that complete a complex 60-mile urban course with live traffic in less than 6 hours. Speed is not the only factor, vehicles must meet the same standards required to pass the California DMV road test.

From the time the robotic vehicle leaves the start chute and begins the course it is entirely under the control of its onboard mission computer – human observers may intervene only for purposes of safety. For the November 3rd Urban Challenge Final Event, the 11 finalists will operate on the course roads along with approximately 50 human-driven traffic vehicles. They will interact with each other just as vehicles in urban areas across America are on the road together, each traveling to a different destination. To be competitive for the prizes, the robotic vehicles must demonstrate they can complete the 60-mile course in less than 6 hours while driving safely and obeying all California traffic laws. The vehicles will face driving challenges such as traffic circles, merges, four-way intersections, blocked roads, parking in a crowded lot, passing parked cars on narrow streets, and keeping up with the traffic flow on two- and four-lane roads.

Robotic vehicles able to perform safely in a dynamic urban environment represent a significant leap in technology advancement. Nothing like the Urban Challenge has ever been attempted. You have a front row seat to a history making event!

Schedule

Urban Challenge Final Event

Friday, November 2nd

5:00-8:00pm	Urban Challenge Barbecue*

Saturday, November 3rd

5:30-9:00am	Event Day Breakfast*
7:00am	Vehicles autonomous in chutes
7:30-8:00am	Opening Ceremony
8:00am	Vehicles launched

Sunday, November 4th

8:00am	Finalist Recognition
10:00am	Awards Ceremony
	Press Briefing to follow

**Tickets are available on a limited basis and may be purchased at the Information Tent on the day of the event.*

DARPA

The Defense Advanced Research Projects Agency (DARPA) is the central research and development organization for the Department of Defense. The Agency manages and directs basic and applied research and development projects, and pursues research and technology where both the risk and payoff are very high and where success may provide dramatic advances for traditional military roles and missions.

Among DARPA's accomplishments are the Saturn V rocket that enabled moon landings, the Arpanet (the first Internet), the Stealth Fighter, and the Predator and Global Hawk unmanned aerial vehicles.

Urban Challenge Finalist Teams

#3
Stanford Racing Team
Junior
Stanford, CA

The team is drawn from faculty and students at Stanford's School of Engineering and sponsoring corporate partners.

Sponsors: Android, Applanix, Coverity Inc, Google, Honeywell, Intel, Mohr Davidow Ventures, NXP, Red Bull, Tyzx, Inc, and Volkswagen of America Electronic Research Lab.

#13
Team UCF
Knight Rider
Orlando, FL

Students and faculty from the School of Engineering and Computer Science at the University of Central Florida have joined with industry partners to form a team with the key technical expertise and management experience to meet the Urban Challenge.

Sponsors: Coleman Technologies.

#15
Honeywell/ Intelligent Vehicle Systems
XAV-250
Troy, MI

The team is comprised of employees from Delphi, Ford and Honeywell. Members of the 2005 IVS team have returned to contribute to their experience and skills.

Sponsors: Delphi, Ford and Honeywell.

Urban Challenge Finalist Teams

#19
Tartan Racing
Boss
Pittsburgh, PA

Carnegie Mellon University's Robotics Institute has come together with General Motors to form Tartan Racing. Team members are employees of the Robotics Institute, and other departments within Carnegie Mellon University and General Motors.

Sponsors: Carnegie Mellon University, Caterpillar, Continental, General Motors, Google, IBEO, Intel, McCabe Software, MobilEye, NetApp, Tele Atlas, Vector CANTech, and Viewpoint.

#21
Team Oshkosh Truck
TerraMax
Oshkosh, WI

Team Oshkosh, formerly Team TerraMax in the 2005 Grand Challenge, has partnered with a new group of industry professionals and universities to take on the new challenge.

Sponsors: Auburn University, Caterpillar, IBEO, Teledyne Scientific (formerly Rockwell Scientific), and University of Parma.

#26
Team Cornell
Skynet
Ithaca, NY

Team Cornell is comprised of students from Cornell University studying subjects ranging from mechanical engineering to computer science. Faculty members at Cornell University oversee these students and provide guidance and real world experience.

Sponsors: Advanced Circuits, Alpha Wire Company, General Motors, MOOG, Northrop Grumman, Septentric, SICK, ST Kinetics, The MathWorks, and Trimble.

Urban Challenge Finalist Teams

#32
VictorTango
Odin
Blacksburg, VA

VictorTango, from Virginia Tech, consists of undergraduate and graduate students and faculty, paired with a Virginia Tech autonomous systems spin-off company, Torc Technologies.

Sponsors: Black Box, Caterpillar, Ford, GM, Goodyear, Honeywell, IBEO, Ingersoll Rand, Lockheed Martin, Michelin, National Instruments, NovAtel, OmniSTAR, QCI, SICK, Tripp-Lite, and Ultramotion.

#54
Team AnnieWay
AnnieWAY
Palo Alto, CA

A group of professionals from several universities in Germany have joined to form Team AnnieWay, a spin-off from the Collaborative Research Center on Cognitive Automobiles.

Sponsors: Fraunhofer IITB, Technische Universitat Munchen, Universitat det Bundeswehr (Munich), and Universitat Karlsruhe (TH).

#62
CarOLO
Caroline
New York, NY

Students, faculty, and employees of five different Institutes of the Braunschweig University of Technology have joined their knowledge, skills, and expertise to form CarOLO.

Sponsors: IAV GmbH, Ibeo, Innovations Gesellschaft Technische Universitat Braunschweig, OmniSTAR, Phoenix Contact, SMS GmbH, Zentrum fur Mechatronik.

#74
Ben Franklin Racing Team
Ben
Philadelphia, PA

Students and faculty from University of Pennsylvania and Lehigh University have paired their education and knowledge with the skills and expertise of Lockheed Martin employees.

Sponsors: Lehigh University, Lockheed Martin, Oxts, Thales, and the University of Pennsylvania.

#79
MIT
Talos
Cambridge, MA

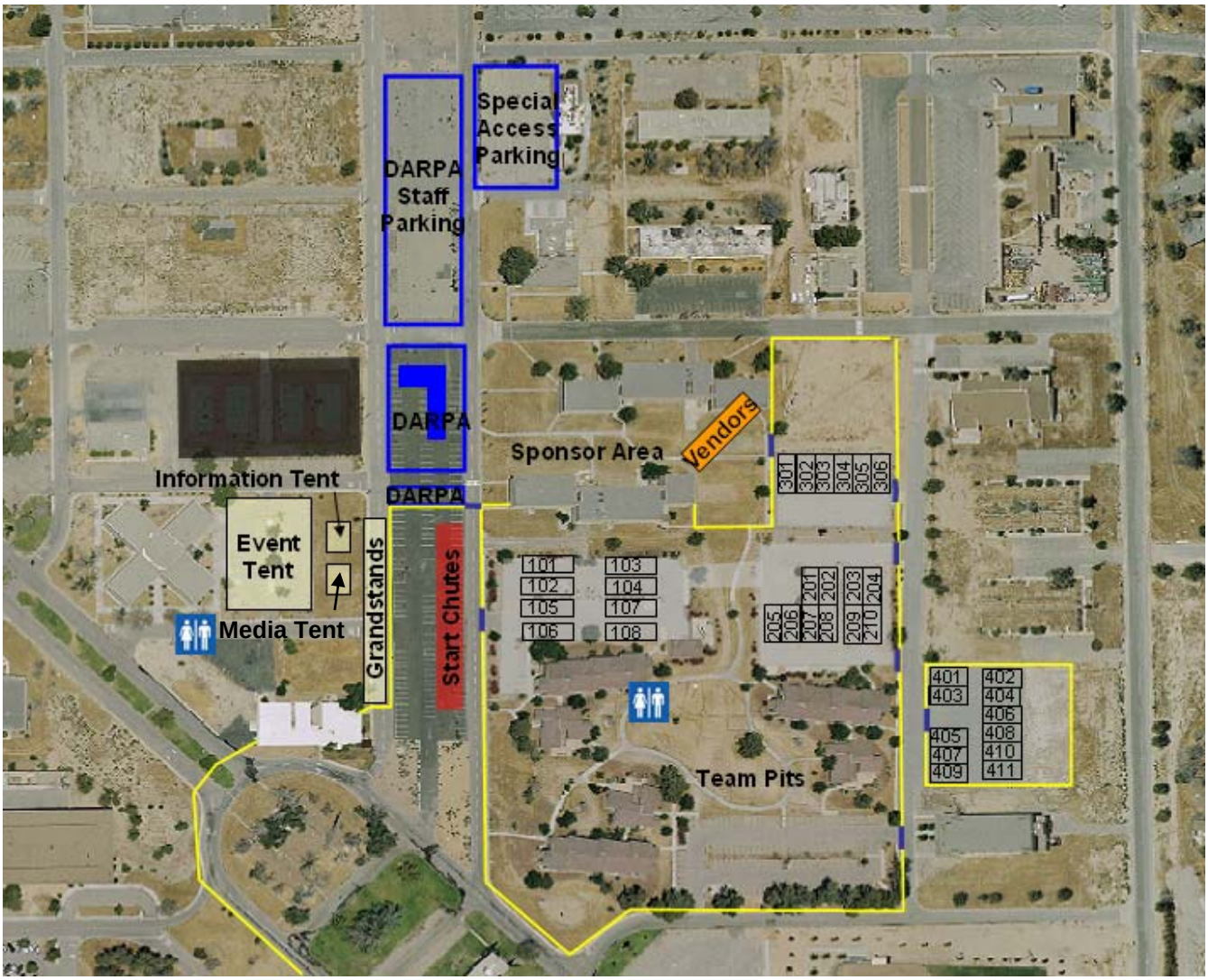
Students and faculty from MIT have joined with undergraduates from Olin College and engineers from Draper Laboratory to take on the Challenge. The team will exploit its strengths in perception, planning, navigation, and control.

Sponsors: Acumentrics, Advanced Circuits, Applanix, BAE Systems, Charles Stark Draper Laboratory, Delphi, Drew Technologies, Ford, MIT, Mobileye, Nokia Research Center, Olin College, and Quanta.

BRIDGING THE GAP
1958 DARPA 2008
50 YEARS
POWERED BY IDEAS

URBAN CHALLENGE

Urban Challenge Finalist Teams



Spectator Information

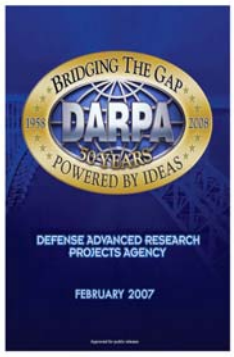
The event is free and open to the public. This year's competition promises to attract more spectators than ever and we're offering a variety of resources to help you make the most of this experience. During the Final Event, the grandstands are the ideal location to view autonomous vehicles starting the course, conducting a mission, then returning to start a new mission. It is anticipated that vehicles will enter and exit the start area multiple times and they may be in the traffic circle areas as many as twenty times throughout the day. Both of these areas are best viewed from the grandstands. On George Boulevard autonomous vehicles will merge into traffic and attempt to pass one another. There will also be live video from the course on big screens in the Event Tent where spectators can follow the progress of the vehicles.

As you enjoy the Urban Challenge we ask that you remember to be safe and to abide by the course rules for spectators as your safety is our number one concern.

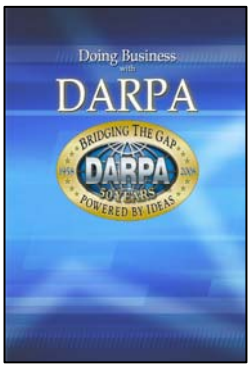
101: Team Caltech
102: Austin Robot Technology
103: Stanford Racing Team
104: Georgia Tech/SAIC Sting Racing
105: Team Cybernet
106: Team Case
107: Team Berlin
108: Team-LUX
201: Gator Nation
202: SciAutonics/Auburn Engineering
203: Ody-Era
204: AvantGuardium
205: Team Gray
206: Team CajunBot
207: Axion Racing
208: University of Utah
209: Insight Racing
210: OSU-ACT
301: Team Oshkosh Truck
302: Team Autonomous Solutions
303: VictorTango
304: MIT
305: Ben Franklin Racing Team
306: Tartan Racing
401: Princeton University
402: Team UCF
403: Team Juggernaut
404: Honeywell/IVS Team
405: Team Urbanator
406: Team Cornell
407: The Golem Group
408: Mojavaton
409: Team Jefferson
410: Team AnnieWay
411: CarOLO

This event is made possible by the efforts of the DARPA Urban Challenge staff. DARPA embraces high payoff ideas that lead to new capabilities for our Armed Forces. The Urban Challenge is one example of what makes DARPA a unique place to work. If you would like to learn more about career opportunities at DARPA, please visit our website at www.darpa.mil.

DARPA is always interested in innovative ideas.



DARPA Strategic Plan
www.darpa.mil/body/mission.html



Doing Business with DARPA
www.darpa.mil/body/dobdar.html

Urban Challenge Final Event Course Map

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URBAN CHALLENGE

www.darpa.mil/grandchallenge