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DARPA announces winners of Virtual Robotics Challenge

By [Darren Quick](#)
June 28, 2013

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Rear view of a simulated ATLAS robot preparing to drive a utility vehicle as part of DARPA's Virtual Robotics Challenge

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DARPA has announced the nine winners of its [Virtual Robotics Challenge](#) (VRC). The VRC, which ran from the 17th to the 21st of this month, was the first of three events that make up the [DARPA Robotics Challenge](#) (DRC) and tasked the 26 competing teams with developing software that would enable a disaster response robot to quickly and successfully perform three tasks that it would likely encounter in a disaster zone.



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As this was a software competition, the setting for the challenge was a virtual environment that resembled an obstacle course set in a suburban area. Software developed by the competing teams was applied to a simulated ATLAS robot that then attempted a series of three tasks that included: entering, driving and exiting a utility vehicle; walking across muddy, uneven and debris-strewn terrain, and attaching a hose connector to a spigot and turning a nearby valve.

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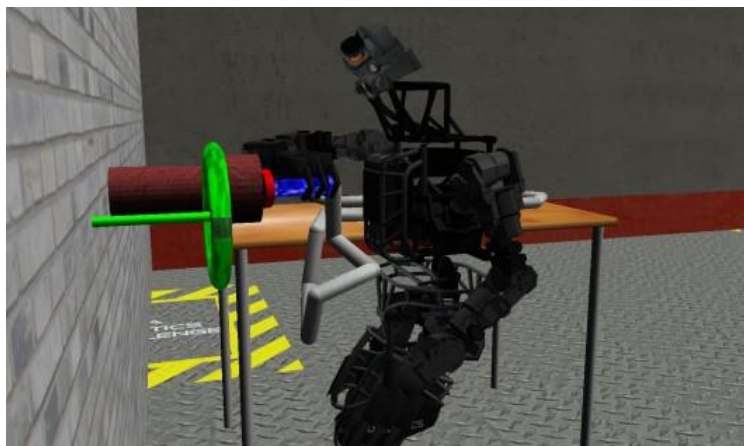
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All of this took place in the DARPA Robotics Challenge Simulator, which is an open-source, cloud-based platform that calculates and displays the physical and sensory behaviors of the robots in a 3D virtual space, in real time. Teams could only view the virtual environment from the point of view of the robot's onboard sensors during the VRC.



Communication between the simulated robot and its operator was transmitted over the internet with a round trip latency of 500 milliseconds on data transmission imposed to simulate potential communications limitations in a disaster zone. The total number of communications bits available in each run was also varied between 60 and 900 megabits.

The 26 VRC teams performed five simulated runs for each of the three tasks, for a total of 15 timed runs. They were then judged on task completion and effective operator control.

The nine winning teams, which have qualified to compete in the DRC Trials in December are:

1. Team IHMC, Institute for Human and Machine Cognition, Pensacola, Fla. (52 points)
2. WPI Robotics Engineering C Squad (WRECS), Worcester Polytechnic Institute, Worcester, Mass. (39 points)
3. MIT, Massachusetts Institute of Technology, Cambridge, Mass. (34 points)
4. Team TRAC Labs, TRAC Labs, Inc., Webster, Texas (30 points)
5. JPL / UCSB / Caltech, Jet Propulsion Laboratory, Pasadena, Calif. (29 points)
6. TORC, TORC / TU Darmstadt / Virginia Tech, Blacksburg, Va. (27 points)
7. Team K, Japan (25 points)
8. TROOPER, Lockheed Martin, Cherry Hill, N.J. (24 points)
9. Case Western University, Cleveland, Ohio (23 points)

DARPA had only allocated funding and ATLAS robots for each of the first six teams to take to the DRC Trials, but JPL, which is also competing in Track A of the DRC (the VRC competitors came from Track B and Track C) has decided to merge its two efforts and offer most of the resources received from the VRC to other teams, with its ATLAS robot going to TROOPER.

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Additionally, Hong Kong University has donated an ATLAS robot for use in the DRC Trials to Team K and Case Western, who have come together to form a new team called HKU. HKU will also be allocated additional funds.

What this means is that a total of seven teams will be competing in the DRC Trials in December with ATLAS robots and DARPA support against other teams fielding their own robots.

The following video gives an overview and shows some of the tasks the virtual robots tackled using the DARPA Robotics Challenge Simulator.

Sources: [DARPA](#), [DRC](#)

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About the Author

Darren's love of technology started in primary school with a Nintendo Game & Watch Donkey Kong (still functioning) and a Commodore VIC 20 computer (not still functioning). In high school he upgraded to a 286 PC, and he's been following Moore's law ever since. This love of technology continued through a number of university courses and crappy jobs until 2008, when his interests found a home at Gizmag. [All articles by Darren Quick](#)



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