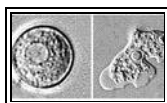


Saturday
August 3 2013
5:05 AM

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Darpa Taps Winners In Virtual Robotics Challenge

Thursday June 27, 2013 12:42 PM

The Defense Advanced Research Projects Agency's Virtual Robotics Challenge (VRC) is over and the agency has announced the winning teams that are receiving not just a cash prize, but a real, life-size, humanoid robot to compete in the challenge's next round.

DARPA announced the winners today (June 27). They are:

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

The purpose of the VRC is to advance the frontier of robots so that they can replace humans in disaster situations, or as DARPA program manager Gill Pratt said at a news conference before the contest, "To make our society and that means society around the world more resilient to both natural and manmade disasters.

For example, a robot could enter a building to turn off a gas leak, or search a collapsed factory for survivors. If sophisticated robots like this had existed when the earthquake and tsunami hit the Fukushima nuclear reactor in 2011, Pratt said, the disaster would not have been nearly as bad. VIDEO: "Printable Robots Fold Up Like Origami Figures"

"If in the first 24 hours it had been possible to vent the reactors, then these explosions would not have occurred," he said. "Human beings tried to do it, but had to turn around."

Current robots aren't up to the task. The ones used in disasters are clunky things, typically with treads, and are used for little more than reconnaissance. But DARPA envisions a future where humanoid robots can go anywhere a person can go. That means being able to climb stairs, open doors and even drive cars, with minimal interaction from a human controller.

The 26 teams selected for the virtual finals had to guide a virtual robot through three trials in a simulated world kind of like playing an incredibly complex video game. The virtual robots had to enter a car and drive it down a winding road, walk over muddy, rubble-strewn terrain, and pick up a fire hose and connect it to a spigot.

In December, teams from around the world will send their state-of-the-art robots through eight trials. The winners from this month's competition will be competing using a DARPA-supplied robot, which will be loaded with their custom software.

The winners are given use of an Atlas robot, developed by Boston Dynamics and based on the company's Petman platform. The Atlas is impressive, Pratt said. "It will be able to walk on its own, balance on its own. I've seen it take a hit from a medicine ball and not fall over."

The DARPA challenge is a step toward more sophisticated robot use in society, but that day may not arrive for a while. While DARPA hopes that the lessons learned from the VRC and the DARPA Robotics Challenge (DRC) will translate someday to commercial uses, nothing concrete is on the table yet. And eight years after Stanford's self-driving car completed DARPA's Grand Challenge, driverless cars aren't (yet) commercially available.

However, Pratt said, when December 2014 and the DRC finals roll around, "We're going to see a demonstration that is very evocative that will make very clear that we can do it."

The government only had prize funding for six teams to move forward, but JPL, which already has a DARPA-funded robot, decided to give some of its funding and Atlas robot to the Lockheed Martin team; the rest of the funding is going to a newly formed team made from a merger of Team K and Case Western.

That team, now known as HKU, will use an Atlas robot donated by Hong Kong University to participate in December. So seven VRC teams are proceeding to the physical challenge.

This story was provided by TechNewsDaily, a sister site to LiveScience.

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