DARPA's ATLAS robot unveiled (w/ Video)

July 11 2013

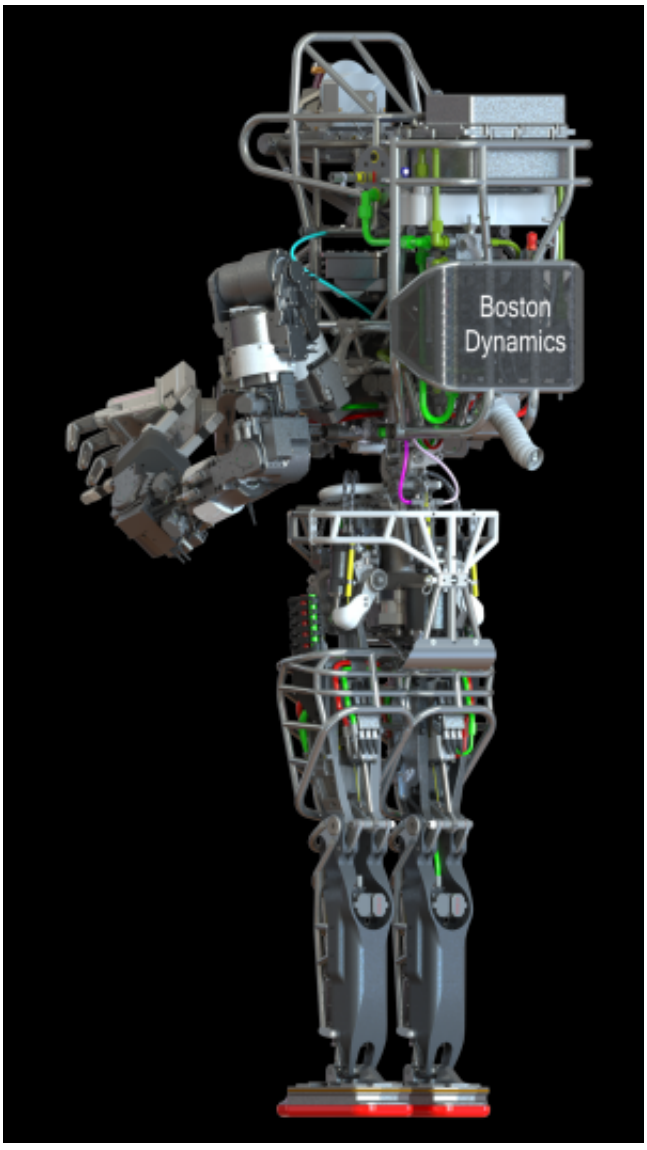
On Monday, July 8, 2013, the seven teams that progressed from DARPA's Virtual Robotics Challenge (VRC) arrived at the headquarters of Boston Dynamics in Waltham, Mass. to meet and learn about their new teammate, the ATLAS robot. Like coaches starting with a novice player, the teams now have until late December 2013 to teach ATLAS the moves it will need to succeed in the DARPA Robotics Challenge (DRC) Trials where each robot will have to perform a series of tasks similar to what might be required in a disaster response scenario.

These seven teams are not starting from scratch. Thanks to the physical modeling of the DRC Simulator, the software algorithms that were successfully employed by teams in the VRC should transfer with minor tuning to the ATLAS hardware. ATLAS is one of the most advanced humanoid robots ever built, but is essentially a physical shell for the software brains and nerves that the teams will continue to develop and refine. That software, and the actions of a human operator through a control unit, will guide the suite of sensors, actuators, joints and limbs that make up the robot. The six-foot-two, 330-pound ATLAS is capable of a range of natural movements and is equipped with:

- On-board real-time control computer;
- Hydraulic pump and thermal management;
- Two arms, two legs, a torso and a head;
- 28 hydraulically actuated joints;
- Carnegie Robotics sensor head with LIDAR and stereo sensors; and
- Two sets of hands, one provided by iRobot and one by Sandia National Labs.

In addition to the robot, the winning teams from the VRC will receive funding from DARPA and ongoing technical support from Boston Dynamics, the developer of ATLAS.

"The Virtual Robotics Challenge was a proving ground for teams' ability to create software to control a robot in a hypothetical scenario. The DRC Simulator tasks were fairly accurate representations of real world causes and effects, but the experience wasn't quite the same as handling an actual, physical robot," said Gill Pratt, program manager for the DARPA Robotics Challenge. "Now these seven teams will see if their simulation-honed algorithms can run a real machine in real environments. And we expect all teams will be further refining their algorithms, using both simulation and experimentation."



More information: www.theroboticschallenge.org/aboutrobots.aspx

Provided by DARPA