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Boston Dynamics Wins DARPA Contract to Develop Legged Squad Support System (LS3)

Dynamic robot will maneuver in difficult terrain, carrying 400 lbs of soldiers' load, and go 20 miles without refueling – No driver required.

Waltham, MA— (February 1, 2010) – Boston Dynamics, developer of BigDog, PETMAN and other advanced dynamic robots, announced today that it has been awarded a contract by the Defense Advanced Research Projects Agency to develop LS3, the first Legged Squad Support System. LS3 is a robot that will travel on rough terrain, going anywhere soldiers and Marines go on foot. Each LS3 will carry up to 400 lbs of gear and enough fuel for missions covering 20 miles and lasting 24 hours. LS3 will not need a driver, because it will automatically follow a leader using computer vision or travel to designated locations using sensors and GPS. The development of LS3 will take 30 months at a cost of \$32M, with first walk out scheduled for 2012.



LS3 solves an important military problem; it reduces the load warfighters must carry in combat missions on difficult terrain.

“If LS3 can offload 50 lbs from the back of each soldier in a squad, it will reduce warfighter injuries and fatigue and increase the combat effectiveness of our troops,” said Marc Raibert, president of Boston Dynamics and principal investigator for the program. “The LS3 program shows just how serious DARPA and the Marine Corps are about building practical, legged robots to offload our dismounted troops.”

Boston Dynamics has assembled an extraordinary team to develop the LS3 system, including engineers and scientists from Boston Dynamics, Bell Helicopter, AAI Corporation, Carnegie Mellon, the Jet Propulsion Laboratory, and Woodward HRT.

The LS3 program follows on the heels of BigDog, a DARPA-funded development activity that demonstrated the feasibility of building legged robots that can travel off-road on sand, rocks, mud, snow and other kinds of difficult terrain, while carrying loads. As part of the BigDog activity, which began in 2003, robots were tested at the Quantico Marine Corps Base in Quantico VA. Tests showed that BigDog could carry about half its own body weight up difficult hiking trails and that it could carry 1.5 times its body weight on flat level terrain. Testing also showed that it could operate without a driver, using an on-board computer vision system to follow a leader who wore a special vest, and that it could travel autonomously using GPS to locations specified on a map. Testing also showed that BigDog has a walking endurance of over 12 miles without refueling.

BigDog won international recognition when a video of it catching its balance on ice and generally moving like an animal appeared on YouTube in 2008. It quickly rose to the most-viewed Science and Technology video in the history of YouTube, currently about 9.3 million views.

“When we started developing BigDog six years ago, the idea that a robot could travel reliably in rough terrain without constant supervision, seemed far fetched. But the research and development went better and much faster than we expected and now we can see the light at end of the tunnel,” said Marc Raibert. “Now we aim for the LS3 program to mark a major leap forward for dynamic robot technology.”

About Boston Dynamics:

Boston Dynamics is a research, development and engineering company that specializes in dynamic robots and advanced human simulation. The company began as a spin-off from the Massachusetts Institute of Technology where the company founders first developed robots that moved and maneuvered like animals. Their ground-breaking work inspired the launch of Boston Dynamics in 1992. Today, organizations worldwide turn to Boston Dynamics solutions to their robotics and human simulation needs. For more information visit www.BostonDynamics.com or see videos of Boston Dynamics robots in action at www.YouTube.com/BostonDynamics.