



Universal Robotics Introduces Neocortex™, “Software with an IQ”

Breakthrough software allows machines to learn from experiences and adapt and react to their surroundings, automating tasks never before possible

San Diego, Calif. (Sept. 27, 2010) – Universal Robotics, Inc. today unveiled its flagship technology, [Neocortex™](#), a revolutionary, patent-protected software that allows machines to learn from their experiences in the physical world. Launched at the Council of Supply Chain Management Professionals’ (CSCMP) Annual Global Conference in San Diego, California, Neocortex makes flexible automation in unstructured environments possible for the first time.

“With Neocortex, we’ve given industrial robots the ability to adapt and react to the world around them and execute tasks in an ever-changing environment, said David Peters, CEO of Universal Robotics. “With this ability to learn, machines will be implemented in revolutionary ways across industries.”

Neocortex has been in development since 2001. It was created at Vanderbilt University with funding from DARPA and NASA and developed using Robonaut, NASA’s humanoid robot. Unlike traditional automation, in which machines are pre-programmed with movements and tasks to execute, Neocortex allows a robot to learn how to complete a task. Once the task is learned, the machine observes its environment through more than 50 channels of sensor data. Drawing on what it learned from previous experiences, the Neocortex-enabled robot changes its actions as necessary in real time to complete the task.

Until now, machine automation and artificial intelligence were bound by the inability to handle unknown variables, limiting their usefulness to structured, controlled environments such as assembly lines. With its ability to allow machines to adapt and react to variables and learn from experiences, Neocortex has removed constraints to flexible automation. This leap forward unlocks the safety and productivity potential of automation for a variety of applications.

“Neocortex is modeled on how we all learn. We sense our environment, act to change it and learn from the process,” said Dr. Alan Peters, Universal Robotics co-founder and chief technical officer. “Neocortex allows machines to perform tasks that are beyond the capabilities of standard industrial robots. From materials handling to underwater mining, Neocortex creates robots that can operate in very dynamic environments and learn to carry out many tasks that are unsafe or impossible for people to perform.”

Neocortex will be initially launched in the materials handling industry as an automated mixed-size box handler. Universal Robotics partnered with Yaskawa / Motoman Robotics, the world leader in industrial robots, to provide a hardware/machine intelligence work cell solution that features Neocortex software, Motoman's [SDA-series robots](#), custom box moving end effectors and a suite of sensors, including Universal's recently launched easy-to-use 3D vision system [Spatial Vision](#).

The Neocortex box mover application replicates human object moving capabilities in unstructured environments. This solution can be deployed to automate tasks including but not limited to, palletization, depalletization and floor-stacked truck off-loading, all of which involve repetitive lifting and twisting and can cause high rates of personal injury. The system not only identifies the object to be moved but also analyzes its placement, shape, orientation and other factors to determine the best way to grasp, lift, move and set down the item. It is able to distinguish boxes from one another, determine the fastest way to unload a pallet, and compensate for weight, orientation and even crushed or wet containers. The system automates a difficult step in mixed size box handling and has return on investment of 18 to 24 months. It is easy to implement in existing work cells and requires minimal modification in warehouse and distribution centers.

For more information about Neocortex, go to www.universalrobotics.com/neocortex.html, or contact Universal Robotics at (615) 366-7245 or info@universalrobotics.com.

About Universal Robotics, Inc.

Universal Robotics develops technology that enables mobile machines to perform tasks that are costly, dangerous or impossible for humans to undertake. The company's flagship technology, Neocortex, is unique, patent-protected software that allows mobile machines to learn from experiences in the physical world, rather than being programmed to act. It enables these machines to perform highly specialized, automated tasks that require them to react and adapt to their environments, and has the potential to increase productivity, profitability and worker safety across industries worldwide. www.universalrobotics.com

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