Willow Garage spinoff debuts robot ripe for picking

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UBR-1

(Phys.org) —A mobile robot a little over three feet with one arm that can move around the building and watch where it's going made its debut on Sunday with capabilities and a pricetag that could eventually earn the robot a place alongside humans in the workplace. The robot is called the UBR-1, suitable for manual labor tasks such as picking and stocking shelves. Created by a young startup called Unbounded Robotics, the robot carries a formal description as a "state of the art ROS based

mobile manipulation platform designed for robotics researchers and business." The ROS refers to the open source Robot Operating System that is the robot's framework. The big deal about the debut is that this is a robot small enough, with a small enough footprint, to take its place more easily than big robots on factory floors, in service environments and in research labs.

Oh yes, and the price. The UBR-1 will cost $35,000, which is a "selling" point that is not minimized by its creators. The newcomer, priced at a tenth of the cost of some other expensive robots, could possibly motivate businesses and labs that did not consider the use of robotics as helpers to take interest.

"You're now transforming a community that so far has had a hard time growing due to the sheer cost of the platform," said company CEO Melonee Wise in an interview with the *IEEE Spectrum*.

UBR-1 is three feet, two inches tall, has a seven degrees of freedom arm and pincer grip. The robot navigates with a laser scanner in its base. Its eyes are 3D sensors, developed by PrimeSense, for perception. The UBR-1 has a continuous run time of three to five hours and an idle run time of over 10 hours. Charge time is posted on the company site as 3.5 hours to 90 percent charge.

The robot comes pre-installed with Ubuntu Linux LTS and ROS, and with applications such as MoveIt!, navigation, calibration, and joystick teleoperation. Wise, in the interview, also called attention to the benefit of the robot with MoveIt! in place, for realtime pick-and-place. For those doing vision research, for example, "they don't want to know about robot arms; once they tell the robot where the object is, they just want the robot to pick it up." Another core feature is that the robot can move around on a circular base with hidden wheels, anywhere in the building where wheelchairs can go. UBR-1 also has a smaller footprint, suitable

for factory or store environments with limited space.

Unbounded Robotics, formed in January this year, is a Willow Garage spinoff. Above all, the company engineers emphasize that the robot is not so much a product but a platform. The designers including Wise wanted this robot to be customizable. The gripper, for example, was created to be as modular as possible so that any customer wanting more fingers or suction cups or other features could fashion the gripper to their own requirements. Also, the customer can attach new sensors. Unbounded Robotics plans to start shipping the robots in summer 2014.

UBR-1 will be demonstrated at RoboBusiness 2013 in Santa Clara, California, later this week. As the title suggests, RoboBusiness is a business development event for the global robotics industry, and it runs from October 23 to 25.

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