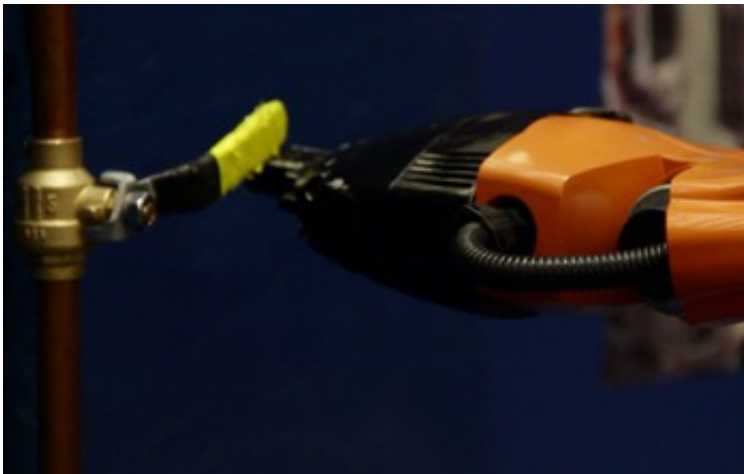


Telerobotics puts robot power at your fingertips

July 23 2014, by Aaron Dubrow



At the Smart America Expo in Washington, D.C., in June, scientists showed off cyber-dogs and disaster drones, smart grids and smart healthcare systems, all intended to address some of the most pressing challenges of our time.

The event brought together leaders from academia, industry and government and demonstrated the ways that smarter cyber-physical systems (CPS)—sometimes called the Internet of Things—can lead to improvements in health care, transportation, energy and emergency response, and other critical areas.

This week and next, we'll feature examples of National Science Foundation (NSF)-supported research from the Smart America Expo. Today: tele-robotics technology that puts robot power at your fingertips.

In the aftermath of an earthquake, every second counts. The teams behind the Smart Emergency Response System (SERS) are developing technology to locate people quickly and help first responders save more lives. The SERS demonstrations at the Smart America Expo incorporated several NSF-supported research projects.

Howard Chizeck, a professor of electrical engineering at the University of Washington, showed a system he's helped develop where one can log in to a Wi-Fi network in order to tele-operate a robot working in a dangerous environment.

"We're looking to give a sense of touch to tele-robotic operators, so you can actually feel what the robot end-effector is doing," Chizeck said. "Maybe you're in an environment that's too dangerous for people. It's too hot, too radioactive, too toxic, too far away, too small, too big, then a robot can let you extend the reach of a human."

The device is being used to allow surgeons to perform remote surgeries from thousands of miles away. And through a start-up called BluHaptics—started by Chizeck and Fredrik Ryden and supported by a Small Business Investment Research grant from NSF—researchers are adapting the technology to allow a [robot](#) to work underwater and turn off a valve at the base of an off-shore oil rig to prevent a major spill.

"We're trying to develop tele-robotics for a wide range of opportunities," Chizeck said. "This is potentially a new industry, people operating in dangerous environments from a long distance."

Provided by National Science Foundation

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