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Honda demonstrates robot controlled by mind power



(Koji Sasahara/AP)

The helmet used to control Asimo using only the power of thought

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Honda has demonstrated another milestone in man's attempts to control machines by the power of thought alone.

Using a helmet-like device that measures a person's brain activity and sends signals to the machine, Honda showed how a researcher could make its celebrity robot Asimo move simply by concentrating on the movement.

The latest version of Asimo been fitted with a so-called "brain machine interface" (BMI), the company said.

The helmet reads patterns of electric currents on a person's scalp as well as changes in cerebral blood flow when they think about four simple movements - moving the right hand, moving the left hand, running and eating.

Honda succeeded in analysing the thought patterns and then relaying them as wireless commands for Asimo. The company showed a video of a person wearing the helmet sitting motionless but thinking about moving his right hand - a thought that was picked up by sensors attached to his head inside the helmet. After several seconds, Asimo lifted its right arm.

Honda said the technology was not quite ready for a live demonstration because of possible distractions in the person's thinking.

Another problem is that brain patterns differ greatly among individuals and so about two to three hours of studying them in advance are needed for the technology to work.

"By only imagining moving their right hand, for example, a test person can move Asimo's right hand," said one of the scientists involved, Tatsuya Okabe of the Honda Research Institute Japan.

"The accuracy of a movement depends on the test person and whether that person is good at concentrating."

ASIMO can perform the motions correctly in 90.6 percent of cases - a record in the field of BMI technology - the scientists told a Tokyo news conference.

The research aims to create a robot which can help people with house-keeping chores such as serving dishes or watering plants. But the demonstration of getting a machine to perform actions by thinking them opens up all sorts of possibilities. It is possible to imagine a not-too-distant future, for instance, when people might be able to open doors or turn on a microwave simply by wishing it.

The project is jointly run with the state-backed Advanced Research Institute International and precision-equipment manufacturer Shimadzu Corp.

"What we are doing is still basic research, but we are working on the dream of commercialising it," said Yasuhisa Arai, president of the Honda Research Institute. "But there is still a very long way to go before commercialisation."

Honda has made robotics a key part of its image, sending versions of Asimo around the world as an ambassador for the company.