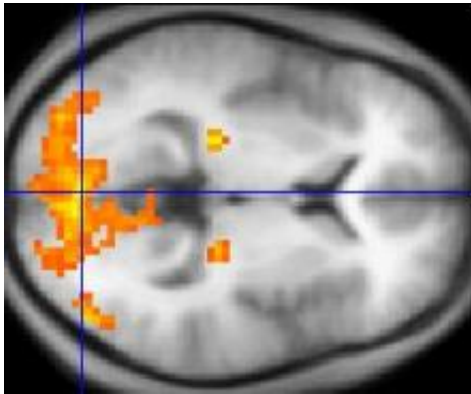


Thought-controlled computers on the way: Intel

25 August 2010, by Lin Edwards



An fMRI scan example. Image: Wikipedia.

(PhysOrg.com) -- Computers controlled by the mind are going a step further with Intel's development of mind-controlled computers. Existing computers operated by brain power require the user to mentally move a cursor on the screen, but the new computers will be designed to directly read the words thought by the user.

Intel scientists are currently mapping out [brain activity](#) produced when people think of particular words, by measuring activity at about 20,000 locations in the brain. The devices being used to do the mapping at the moment are expensive and bulky MRI scanners, similar to those used in hospitals, but senior researcher at Intel, Dean Pomerlau, said smaller gadgets that could be worn on the head are being developed. Once the brain activity is mapped out the computer will be able to determine what words are being thought by identifying similar brain patterns and differences between them.

Pomerlau said words produce activity in parts of the brain associated with what the word represents. So thinking of a word for a type of food, such as apple, results in activity in the parts of the brain associated with hunger, while a word

with a physical association such as spade produces activity in the areas of the [motor cortex](#) related to making the physical movements of digging. In this way the computer can infer attributes of a word to narrow it down and identify it quickly.

A working prototype can already detect words like *house*, *screwdriver* and *barn*, but as brain scanning becomes more advanced the computer's ability to understand thoughts will improve.

If the plans are successful users will be able to surf the Internet, write emails and carry out a host of other activities on the computer simply by thinking about them. Director of Intel Laboratories, Justin Ratner, said it is clear humans are no longer restricted to using a keyboard and mouse, and [mind reading](#) is the "ultimate user interface." He said he is confident any concerns about privacy will be overcome.

While many able-bodied computer users may hesitate to adopt a technology that operates a [computer](#) by reading their minds, people who are unable to use a keyboard or a mouse through disability should find the new technology gives them much more freedom and opportunities for communicating.

More information: Via [Telegraph](#)

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