

BrainGate Assistive Technology

Shaun Russell
ELE382

Millions of people worldwide have severely limiting disabilities. Assistive technology is developed to help them be more independent and have greater control of their environment. There are a wide variety of devices available to satisfy their various needs.

Most devices are dependant on vocal expressions, blow tubes or simple switches, which can have environmental interference.

Cyberkinetics Neurotechnology Systems in conjunction with Brown University has developed a system called BrainGate, which allows the patient to control a computer via thought. Many functions can be done from the computer such as turning on and off devices, lights, thermostats, changing television channels etc.

The BrainGate system is currently FDA approved for limited clinical trials. The BrainGate system is a Brain Machine Interface (BMI) and is highly invasive. It consists of a 10x10 electrode array that is implanted on the motor cortex of the patient's brain. The electrodes are then connected to an external computer via 100 gold wires that are fed out of the skull via a pedestal. The external computer analyzes the output from the brain and attempts to decipher your intentions.

Matt Nagle, of Massachusetts is the first patient of the clinical

study. He got his system installed on June 22, 2004 at Rhode Island Hospital. His recovery time was approximately 3 weeks.

A lot of hard work and "tuning" sessions have led to remarkable results. He can control a cursor as if it was part of his body. He can change TV stations, check email and do various other things on the computer.

This technology is far from being an option for the public, but something similar will most definitely be available in the future. Researchers hope that one day this system will allow patients to control their wheelchairs and prosthetic limbs with a similar system.

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