* It consist of a sensor that is implanted in the motor cortex of the  
  brain and a device that analyses brain signals. The signals generated by brain are interpreted and translated into cursor movement on computer screen to control the computer.

In December 7, 2004, brain-computer interface had been clinically tested on a human by an American biotech company **Cyberkinetics.**

**Software behind BCI**

* The technology is comprised of four main components; a signal capture system, a signal processing system, a pattern recognition system, and a device control system.
* The signal capture system includes the electrodes themselves and the isolated electronic amplifiers
* The signal processing system includes the algorithms for the linear prediction of the signal.
* The pattern recognition system often used to be composed of neural networks as to recognize which neurons are producing these signals.
* Interfaces have been developed to control different devices .

**Future Concerns**

* **Light Reactive Imaging** BCI devices are still in the realm of theory.
* This would involve implanting a laser inside the skull.

The laser would be focussed on a single neuron and the neuron’s reflectance is measured by a separate sensor.

* When the neuron fires, the light pattern and wavelength it reflects would change slightly . This would allow the researchers to monitor a single neuron and require less contact with the tissue.
* Researchers of the Carleton University , Canada believe that the same interface could form the basis of a mind-controlled password system.

**BCI INNOVATORS**

* **Pioneers**
* **Nasa**
* **Cyberkinetics neurotechnology system,**
* **Japanese reaserch team**