

IMPLEMENTATION OF MIND CONTROL ROBOT

ABSTRACT

Embedded Technology is now in its prime and the wealth of knowledge available is mind-blowing. However, most embedded systems engineers have a common complaint. There are no comprehensive resources available over the internet which deals with the various design and implementation issues of this technology. Intellectual property regulations of many corporations are partly to blame for this and also the tendency to keep technical know-how within a restricted group of researchers.

There are billions of neurons interconnected in human brain. Human thoughts and their emotional states affect the interactions between these neurons. Every interaction between these neurons creates an electric discharge which cannot be measured using current technology. However, the activity created by thousands of concurrent electric discharges aggregates into waves which can be measured. The sequences of interactions between these neurons are a result of different brain states. These patterns of interaction produce waves of different amplitudes and frequencies. These wave patterns can be used to determine emotional state of the brain.

The goal of this project is to measure electric activity in the brain due to firing of these neurons, parse wave to obtain attention and meditation level of brain and use it to move a robot. There are different techniques available to detect electric activity in brain. One technique is Electroencephalography (EEG).

EEG measures voltage fluctuation along the scalp that results from the interaction between the neurons in the brain. These voltage fluctuations are processed and output to a microcontroller by the EEG sensor. The data packets obtained from the EEG sensor are stored

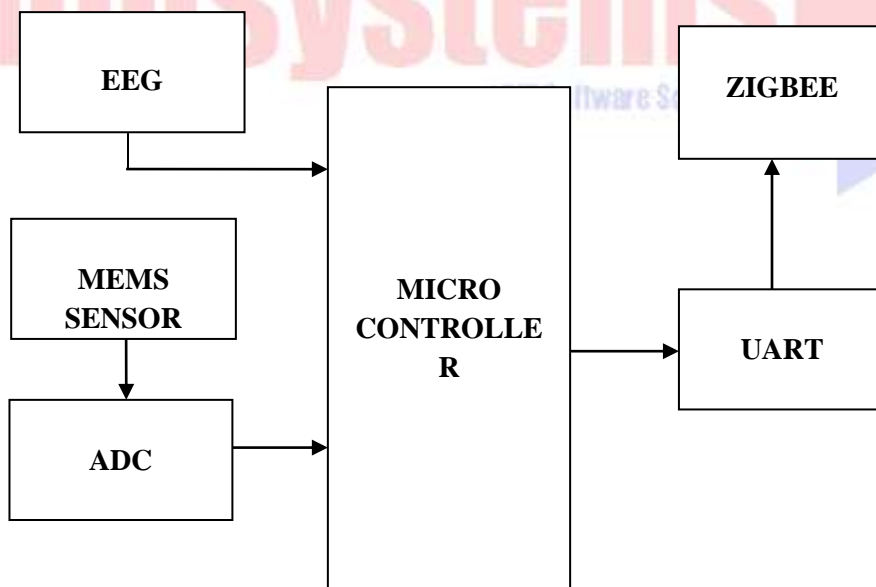
in microcontroller. The microcontroller uses different techniques to process and parse the data. The attention and meditation levels are obtained from the processed data. These levels are used to control the direction and motion of the robot.

PROPOSED SYSTEM

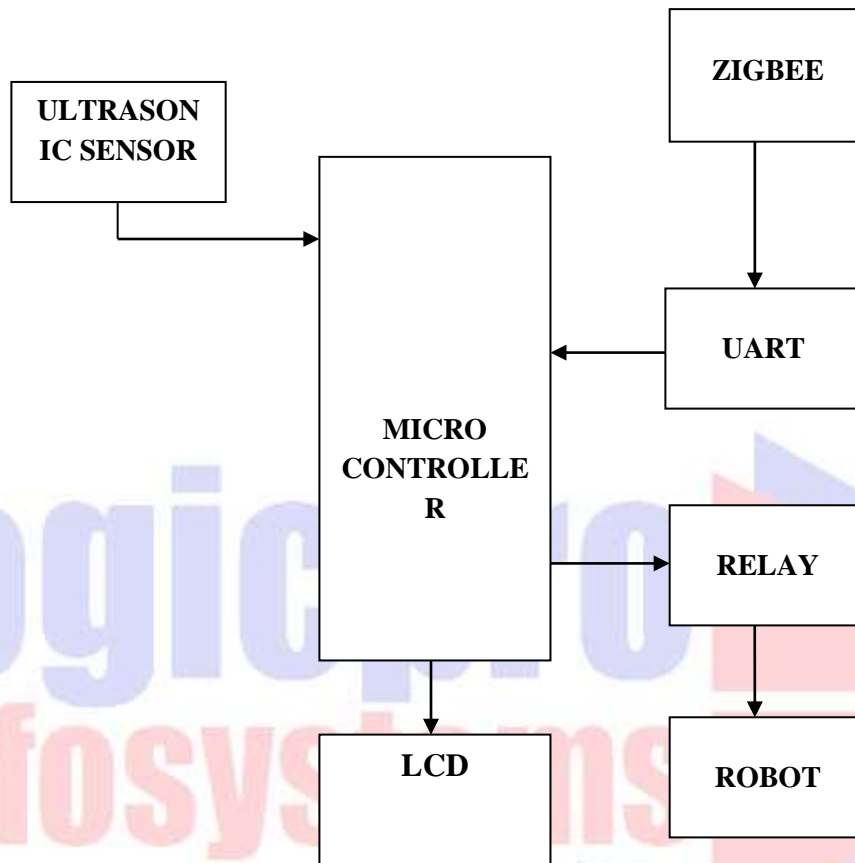
In this project, we are going to implement mind controlled robot using EEG and MEMS. The EEG is used to on and off the robot and MEMS is used to control the robot. The EEG will monitor the brain activity and it is used to on or off the robot and MEMS will move according to the movement of the head. The information is transmitted through Zigbee and received in the receiver which in turn turns on the robot to move. The Ultrasonic sensor is used to find the distance.

BLOCK DIAGRAM

- **TRANSMITTING SIDE**



- **RECEIVING SIDE**



HARDWARE REQUIREMENTS

- MICROCONTROLLER
- MEMS SENSOR
- UART
- WSN
- LCD
- ADC

SOFTWARE REQUIREMENTS

- MCU COMPIERS
- PROTEUS SOFTWARE

MICROCONTROLLER may ATMEGA,8051,PIC OR Arduino

