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BRAIN CONTROL CAR FOR DISABLED USING ARTIFICIAL INTELLIGENCE.

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ABSTRACT

This paper considers the developed a brain driver car for disabled person and mostly helpful an own vehicle for drive in the road to be easily in this technology use in intelligence great help in accidental or physically disabled people. Artificial Intelligence technology using an since this cars will rely individual is thinking they will hence any other physical movement on this part of individual.this technology done using biocontrol system. The car an integrates to the fixed signals from various sensors like wheather monitor, voice assistant and video etc.this driver system automatic navigation on road used in in case of emergency alert.its advanced of technology which will make the disabled people. The automatic security system ensures the safety driver from other autonomous vehicle.This brain control system ensures that Handicapped person is able to individually without needing to dependable other monitoring.

Keyword – Artificial Intelligence ,Brain control car, Disabled.

INTRODUCTION

A brain computer interface are technology to be sometimes are neural interface and brain machine work on the brain machine intraction between communication by human brain and intelligence machine. A brain computer interface that disabled prson drive the car an in this technology to the analyzer on continuously monitoring outside the car once can driver disabled nears the car.The security system of car is actvated in drive time time to safely using in person. If the video and images for the analysis match with the databse entries then the security system in advances to next step in that intelligence technology.

To brain control for which people drive the car an on the system to sensors are working this system to mke drive an analysis to be once the driver passess through this stage door slides to the sides and a ramp lowered from with database analyze can drive system in that interface disabled person own vehicle drive to be system on work to be handle driver are used in automatically robotics arms assist the driver to his seat . As soon as driver driver seat helmet ,attached to the top seat arrangement are comfortable in that vehicle to drive time suitably placed on the head to his seat. For starting the car on drive start button on clicked own vehicle movement car that time then the accordingly the computer switches ON circuit vehicle start the vehicle connection can be starting from this vehicle from battery to induction motors.

BIOCONTROL SYSTEM

The braincontrol system integrates signals from various other system and compares them with originals in the database.If the following system:

Brain computer interface

Automatic security system

Automatic navigation system

Now let us discuss each system in detail.

BRAIN COMPUTER INTERFACE

Brain computer interface will be the is a direct electrical and technology activity an external devices most commonly computer or robotic devices the interface communicate are device in mapping,assistant or human repairing and sensor motor function. They are often that human interface human or machine interface that skips the component of physical movement of the body parts. It will increase acceptance by offering customized , intelligent help an train especially for non expert user .development of a such flexible works on raises many challenges face in the areas of machine perception and automatic explanation we refer the initial design as low frequency Asynchronous Switch Design (LF-ASD).

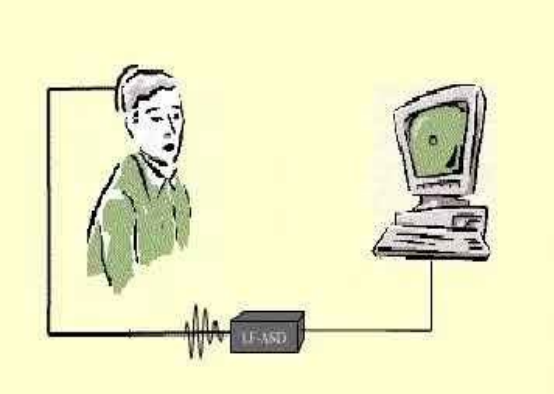

Fig.1 LF-ASD

The Electroencephalograms then the run through a fast transform before being displayed as three dimensional graphics brain control car system such that is configured for the particular task being used in the evaluation to generates all controls programs using MS Visual C++ analysis of data is mostly done lab environment.

TEST RESULTS COMPARING DRIVER ACURACY WITH/WITOUT BCI

1. Abled bodied subject using imaginary movements could attain equal or better control accuracy for while drive able body using real movements.

2.Subject demonstrate activation accuracies in the range 70-80% with activation below 2%.

3. Accuracies are actual fingers and body movements observed in the range of 35-80%

4.The average classification accuracy of imaginary movements was over 99.

The low frequency Asynchronous design trace the motor neurons in the brain. when the driver for physical movement at that time sends impulse to motor neuron hence we decode the messeges at motor neuron in the brain. By observing the sensor neuron we can monitor the eye movement of the driver.

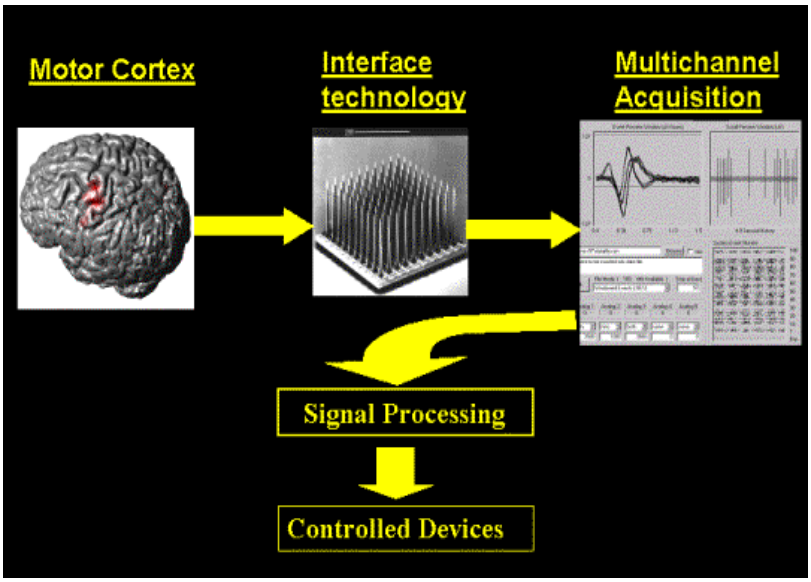

Fig.2 Brain Machine Mechanism

The brain control car analyze to be movement can the system of curser on the screen also moves driver concentration on one particular point in his environment. The sensors work o which are placed at the front and rear end of the car send a feedback of the computer.The steering wheel is turned into the specific angle by electrochemical actuators.The angle is created by turn is from the distance moved bt dot on the screen.

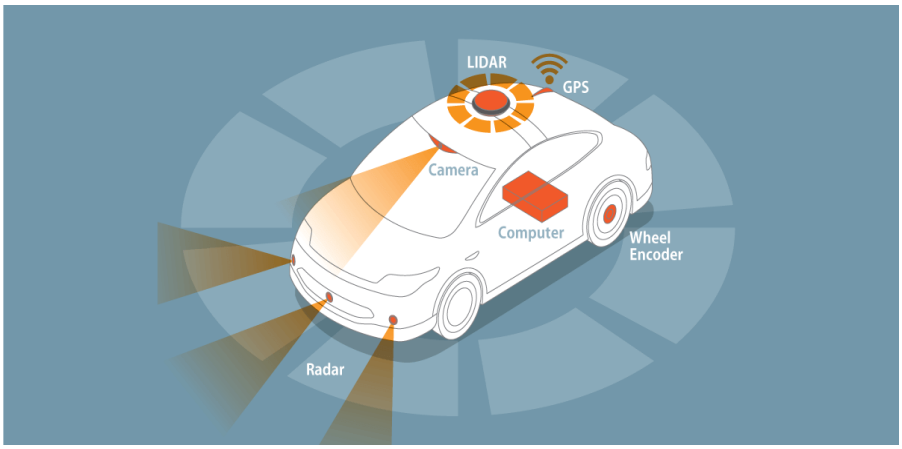

Fig.3 Sensor and their Range

77GHz Long Range Radar	Infrared	Video	Ultrasonic	Video
Long	Night vision	Medium	Ultra short	near
>160m	<160m	<70m	<5m	

Table. Sensor and their Range

AUTOMATIC SECURITY SYSTEM

The EEG of the driver monitored controlled when the drops less than 4Hz then the driver is in unstable state. A driver drive the car on road a message is given to the driver for confirmation to continue drive car. An automatic security system in car features include like typically remote keyless entry, alarms system, etc.these system help protect to the vehicle from unauthorized access.

AUTOMATIC NAVIGATION SYSTEM

In the automatic navigation system GPS, Digital compass and angle sensor are acquire the position and posture information of the vehicle. The Navigation system is instrument determines the position of a vehicle and route particular place. other sensor to provide its commonly used in vehicles, smartphones, and other devices to provide turn by turn directions , maps and information about nearby points of intrest. Car drive to the navigate sensor in alert to this mode on monitoring at that place can navigate to the ahead arrow route turn an artificial intelligence it automatically monitors every route can travelled and its map destination such as database for future use. In this map used an finding the route in shortest path to time travelled destination choose. An automatic navigation system is a technology that uses GPS to provide real time guidance and direction to users to drive the car an helping the for which navigate from one location to another.

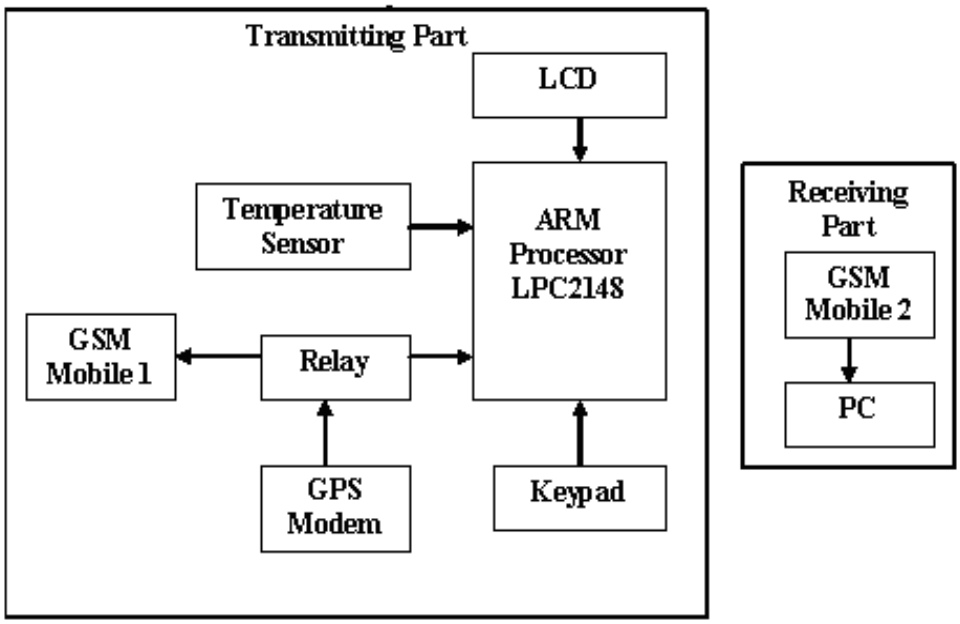

Fig.4 Block Diagram Automatic navigation system

ELECTROENCEPHALLOGRAPHY

The Electroencophallography the obtained in the system are placing is a medical test that records electrical activity in the brian.its like commonly used to diagnose condition like epilepsy and study brain function. recording is obtained by placing electrodes location and names are specified by international 10-20 system most clinical and research application. This system rather than ensure that naming of electrodes is consistent across laboraties. A smaller number of electrodes are typically when recording EEG from neunates. The human brain are EEG for nervous system to sensing while drive car use can be cerebral cortex for mean that EEG sense wave used to measure electrical activity of the brain.

Detect the activity of large groups of neurons that are active at the same time primarily measure postsynaptic potentials (not action potential) can be use to measure brain activity that accurs during an event, measure spontaneous brain activity during this painless test, small sensors are attached to the scalp to pick up the electrical signals produced by brain. The recorderd waveform reflects the cortical electrical activity can be used diagnosed sleep related disorders. Since an EEG voltage signal represents a difference between the voltages at two electrodes the display of he EEG for the encephlographer mat be up set in one several ways.

NEURO HEADSET

1.It consist of 16 EEG sensors

2. EEG measures the voltage fluctuations

3.resulted activity sends to the system interpretation

4. sensory neurons of brain can generate impulse to the neuron headset and monitors the eye movement of the driver

PRO'S

· It is helpful for the individual to shift gears change speed acceleration with their mind directions.

· this technology also help physically challenged people to drive car any external movements

CON'S

· Cost is High

· Design is Complex

METHODOLOGY

The control of the drive in road your using only for which car used by only your thoughts. Electroencephalograph is that must be the record of oscillation n the wave form of brain signals EEG the signals are intelligence technique an activity is quit small measure main signal frequency human we are capturing EEG signals using different brain such as system can be are the results of different technical pattern neural interaction these pattern lead to waves characterized by different amplitudes and frequencies wave between 15 and 35 Hz, Beta waves are associated with concentration while waves 10 and 12HzAlpha waves.

IMPLEMENTATION

The car drive while a system can be will rely only what individual is thinking they will any physical movement in the car part on the captured by EEG signals send to Bluetooth mode. It is connected with internet of things that actual arduino in which instructions that must be system for the movement of them are programmed. It converts the signals send to be sense in technology into commands drive car.car instruction will be the drive alert to on road driver needs to wear brain signal of them signal following which one can control the car forward , backwards , come to a stop, lock or unlock vehicle without moving their hands or feet.

ESTABLISHMENT OF BLUETOOTH INTERFACE HC-05:

The Bluetooth interface can be particular system are these intelligence so far are transmitted by the internal Bluetooth wireless module the mind wave mobile connected are headset is received that must module in HC-05 interface organized using things of arduino in chips is connected on personal computer arduino hardware connectd are car controlling on the information transmitted are arduino board same time of software happening are communication part.

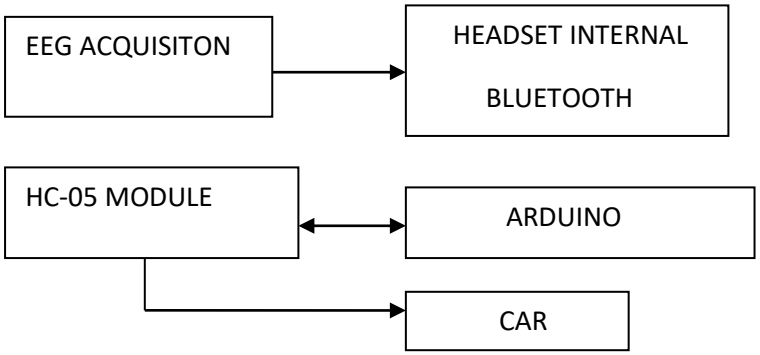

Fig.5 Bluetooth Interface

CONCLUSION

This car brings a revolutionary change in the society which helps to eradicate difference between able people and disabled people. when the above requirements are satisfied and if this car becomes cost effective then we shall witness above change. The integration of bioelectronics with automotive system is essential to develop efficient and futuristic vehicles, which shall be soon helpful for disabled. This an era of technology in artificial intelligence is conquer year to came.

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