



# ENVEX 2010

Engineering For Society

## Brain Power Word Communication System



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### PROBLEM STATEMENT

- Total paralysis caused by motor nerve disorders (MND) and stroke will leaves the individuals immobile for life.
- Patients who suffer serious Motor Nerve Disease (MND) are not able to perform any verbal and non-verbal communication with others.
- MND does not affect the five senses: sight, hearing, taste, smell and touch; also does not affect the mind, heart and bladder.
- 20% of MND patients live five years or more; 10 % will survive more than ten years.
- The brain-power word communication system is developed and targeted for the disabled people who are suffering from speech disabilities
- This system can effectively improve the quality of their life.

### OUR PRODUCT

- The Brain Power Word Communication System is a system which can help the paralyzed patients to communicate through a single word command and also the audio output of the word.
- Our product makes use of the active brain functions of the patient to convert their thought signals into word and audio signal.
- This is accomplished by using a brain interface.
- The interface captures the brain signal from the temporal lobe region of the brain, processes these signals and translates them into word and audio.

### NOVELTY

- Brain Power Word Communication System is only the system that is able to directly convert the brain signal into word.
- The operating time for the system to convert the brain signal into word is faster than current brain spelling system.
- Helps care givers to understand their patient needs.
- Can be used safely by individuals with total paralysis.

### INVENTIVENESS

- With minimum 2 and maximum 8 electrodes are required against traditional 6 to 32 electrodes. Hence less electrode application time.
- Simple protocol using only simple words – easy to remember by users.
- User just needs to think the word rather than spell it hence less operating time.

### COMMERCIAL POTENTIAL

- The system can be custom designed for each individual based on their environment.
- The system can runs on any PC platform with simple user graphical interface.
- The system can improve the quality of life of the patient.
- The system is cost effective since only maximum numbers of 8 electrodes are required.



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