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A

PROJECT WORK ON

“SMART GLOVE INTERFACE FOR THE PHYSICALLY CHALLENGED”

Carried out

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ABSTRACT

Physically challenged people, old people or people who are left paralyzed, often have to depend on others for a number of activities, in their day to day life. Appliances / gadgets which can make their life more comfortable are always welcome. This project is an aim to develop such a gadget, which can be used by people who find mobility difficult.

The gadget is a glove, which consists of a number of sensors, which enable us to understand the gestures made by people. The sensors together with the signal conditioning circuits, convert the hand movements into digital signals, which are then mapped to a known gesture. These gestures are then sent wirelessly, through RF modules, to a base station where the gestures are converted into action. The base station on receiving the signals, maps to known gestures and once it finds a match it takes a course of action.

In this project, a smart glove is designed, to help a physically challenged person to perform simple operations like switching on a light, switching on the fan or ringing an alarm, in case of an emergency. These actions can be performed by just a simple gesture like bending a finger. Each gesture is mapped to an action. We can develop a simple mapping like “If the middle finger is bent, then ring the alarm bell”; “If the ring finger is bent, switch on the fan”, and so on.

Sensors are placed in the glove worn by the patient. RF platform is used for the wireless transmission of information on the movement of the fingers to the base station. The base station has a microcontroller, which is programmed to map the gestures to the actions. Actions would be initiated to take the necessary action. Actions which are used in day to day life, and which can be really difficult for a person who cannot move, are considered. The three most important actions are switching on and off a light, switching on and off the fan and raising an alarm.