VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM

A Project Report On

"GSM BASED BORDER SECURITY SYSTEM"

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ABSTRACT

We know that soldiers are sacrificing their lives throughout day and night to safeguard the country .In spite of all the cares taken by the military people intruders may cross the borders and enter into our land to damage the important properties of the country and kill the innocent public. To solve this problem we have made an attempt to design an electronic system, which can detect the intruder and take the necessary action immediately. This consists of two or more wireless sensor networks deployed near the border. Each sensor network consists of multiple sensors to detect the vibration .The output of each sensor is connected to a multiplexer and then to the input of ADC. After the conversion process decision is taken by the hardware and software of the system according to the inputs. It will continue this process hundreds of times in a second. When there is no intruder wireless system is disabled . In case of detection of enemy Wireless transmitter is enabled to give information to the military office about the entry of the enemy. To differentiate between friend or foe we are using a small range RF transmitter and receiver. If the signal of specific frequency comes from the RF transmitter system will identify that it is from a friend (person belonging to our country). Else he will be treated as intruder and action is taken to switch on the camera immediately and take the video information about the enemy. In addition an alert text message is sent to mobiles of some important military officers and other related military people through GSM immediately for action . Using robotic targeting we can use this system to trigger the rifle which destroys the enemy.

The improvement of science and technology has lead to many changes in the way of life. We are using this latest technology in most of applications like robots, space research, medical appliances, automobiles, military, education etc., In this regard we have made an attempt to design a embedded system, which takes the responsibility of checking the intruder when an dangerous condition is found.

Our system consists of vibration sensors to check sensitive points of the border. The outputs of sensors are fed to micro controller for digital conversion by using ADC. The output of ADC is stored in memory locations and then compared with standard reference values of lookup table to decide whether the parameter is safer or not. The same procedure is used to check all

other parameters when an abnormality is found the robot will move forward and turns off the corresponding system immediately to control the subunit from damage.

GSM modem has been used for communication with the owner of the product. Owner and users can control the operation of the devices connected to the product from a far away place. It is possible by sending a text message in the predefined format to the GSM modem, SIM card is used in the modem. Whenever owner sends a valid SMS to the GSM modem (Mobile number of this SIM card), the message is read and verified for password and valid command. If the text message is in the predefined format and the password matches with that of the stored password, then appropriate action will be taken by the micro controller based on the request made. Similarly whenever a security problem occurs, it will be informed to the owner of the product, by sending an SMS to his/her mobile.

Short Message Service (SMS) is a mechanism of delivery of short messages over mobile networks that are widely spread across the globe. In our proposal, the commands to control the devices will be sent through SMS to a GSM Modem connected to a Micro controller. After receiving the SMS, the Micro controller will analyze the received data and then Micro controller will make high or low the status of its I/O port. Therefore, by sending appropriate data via SMS, the control action can be taken remotely. Also, by receiving SMS from the remote receiver we can check the operating status of the controlled device.

GSM modem can be controlled by standard set of AT (Attention) commands. These commands can be used to control majority of the functions of GSM modem. The software of the project is written in personnel computer and then entered into the chip by using programmer after simulation.