VISVESVARAYA TECHNOLOGICAL UNIVERSITY
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A REPORT ON PROJECT WORK

Zigbee based patient analyzing system with WAP

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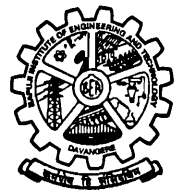

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ABSTRACT

In hospitals, the patients in the ICU need a constant monitoring of their temperature, BP and heart beat. This project is a working model which incorporates sensors to measure important parameters namely the temperature, respiratory temperature and ECG. The sensors are interfaced to computer, so that the condition of a patient can be analyzed by doctors in any part of the hospital wherever they are. Thus it reduces doctor's work load and also gives more accurate results.

Whenever there is an abnormality felt by the patient, the particular patient will give an alarm signal, by which the doctor can rush to the patient. Even when the patient is in an unconscious condition, all the parameters will be sensed and doctor will be cautioned with a multimedia support. A saline monitoring system has been incorporated, which gives an alarm when the saline bottle is about to be empty. The data collected by the PC are recorded in separate file with date and time, which can be used for future references by the doctors.

ZigBee was designed with these applications in mind and understand the importance of low cost. For that reason, it was designed to run on the existing 8-bit MCUs that control many devices in these areas, reducing the need for additional processing power. Freescale's 2.4 GHz band ZigBee-ready RF transceivers can be used worldwide, eliminating the need to redesign and certify a product for various markets or regions.

This technology has a desired impact on industrial and hospital automation. The hardware of this project is built on a printed circuit board, constituting PIC micro controller 30F4013. It is a versatile micro controller with in-built features such as 12 bit multi-channel ADC, USART, synchronous serial port, programmable low voltage detection circuit etc, which is to be interfaced to PC system through RS232C. The necessary signals from the external cords, like different patients temperatures can be converted in to digital form by giving them to PIC. The software can be easily modified for any alarm setting or record intervals since it is written in Visual Basic.