

Digitouch (E-Belt)

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Abstract— Health monitoring of remote patient who is travelling is the main aspect of project. We proposed an integrated and transportable belt comprises of physical parameters monitoring circuitry. Body temperature and Heart rate is monitored by the system. This belt should be in contact with the at-risk person. The sensors monitor parameters and status of health can be remotely seen. If the person finds any emergency system will notify hospital or relatives. This Belt found very reliable for medical patient and elder people and also reliable and accurate. These systems consist of various sensors which continuously monitors human body parameters such as heart rate (Infrared finger clip sensor) and temperature (DS1621). As a result, and also due to their embedded transmission modules and processing capabilities, wearable health monitoring systems can have low cost and solutions for remote health, mental and activity status monitoring.

Key words: E-Belt, Digitouch

I. INTRODUCTION

The proposed work highlights the design of a simple, intelligent, low cost physiological parameters monitoring system integrated with Bluetooth and GSM technology which sends alert information at the time of emergency [1]. The National Heart, Lungs and Blood Institute states that “more than 3 million people in India have a heart attack and about half of them die in each year”. Half of the people mentioned above die due to not getting service within 1 hour. When the blood flow and oxygen supply to heart muscle is blocked the heart, attack happens and most of the times the reason is Coronary Artery Disease (CAD). When the arteries that supply blood to heart gets narrowed and hardened, CAD occurs. Most of the times it causes irregular heart beat by blocking blood stream. With the help of the proposed system we can locate the patient when the patient has heart attack. Also body temperature is measured by the temperature monitoring system so as when the temperature exceeds the normal human body temperature (which is approx. 37 deg. Celsius) then the readings along with those of the heart rate gets updated to the nearest hospital from the patient.

II. RELATED WORK

Before having this project idea, we have surveyed some existing systems in hospitals. Now a day, the systems which are existing monitors the health of person at some predefined locations such as hospitals. So, when the person is travelling and needs some medical emergencies our system can be a solution. It will notify the hospitals which are closer to distressed person that this person needs medical service. Although this research tried to address several issues that have to do with deploying a wearable system prototype. Additionally, the knowledge base of diseases/disorders that system takes into consideration when trying to estimate the user’s health condition can be expanded with more rules and questionnaires can be utilized to acquire more detailed expert

dimensional data can be captured from a variety of patients, which can then be later used to define comprehensive statistical models if we enhance the intelligence of system.

III. PROPOSED WORK

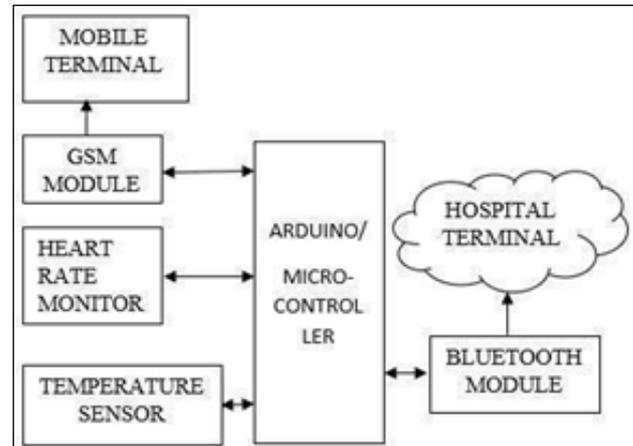


Fig. 1: Proposed Module of Digitouch E-Belt

Health monitoring devices [1][2] constitute the front-end components of the health information network and are primary responsible for a) collecting physiological data from the patient/user and b) transmitting them securely and reliably to desired terminal. Traditionally, crude and bulky monitoring devices have been employed to collect patient vital signs, for example bedside Holter ECG monitors as the ones used in Intensive Care Units (ICU). As a result, personal health monitoring devices need due to the inherent nature of their application to be of small size and weight and they have to be portable and autonomous.

Wearable health monitoring systems (WHMS) [2] may comprise various types of miniature sensors, wearable or even implantable. Bio-sensors are capable of measuring significant physiological parameters like heart rate, body and skin temperature. The acquired measurements are in turn communicated either via a wireless or a wired link to a central node, for example a Personal Digital Assistant (PDA), a Smartphone or even to a microcontroller board[2][3], which may then in turn display the corresponding information on a user interface or transmit the aggregated vital signs to a medical center server[4]. Finally, at the health provider’s end, the medical personnel and supervising physicians can have instant access to real-time physiological measurements[5] and the medical history of several in and out-of-hospital monitored patients by securely connecting to the medical center’s servers. This described scenario is graphically illustrated in Figure.

IV. RESULTS AND ANALYSIS

In our project we monitored mainly two human body parameters that is 1) Heart Rate 2) Body Temperature using different sensors.

Sensors	Maximum Range
1)Infrared Finger Clip sensor	It counts Heart rate for that particular time.
2)DS1621 Temperature sensor	-55°C to +125°C in 0.5°C Increments.

V. CONCLUSION

Thus, we have tested the different modules in our project and check working of all modules. All modules in the proposed model of our project are interfaced with Arduino. And measure different health related parameters of human body. After measuring health parameters of human body through GSM module this information is forward to nearest hospital server and relatives of patient. The proposed module of our project is simulated in Proteus professional software.

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