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# DETECTING PHYSIOLOGICAL PARAMETER OF HUMAN ACTIVITY USING WEARABLE SENSOR

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ABSTRACT:
Due to the high population and aging people it becomes difficult to go hospitals .the Monitoring of people activities is possible without hospitalization .through the wearable sensor it identify the physiological parameter such as heart rate, body temperature ,sweat rate and blood pressure.The sensor can easily worn by human body and it monitoring the human activities .if any defect will happen the sensor will automatically inform to doctor through the message using GSM. After getting message ,the doctor will give a prescription to the patient via the message.

## .I. INTRODUCTION

wearable sensors have become very well-liked in many applications such as medical, diversion, security ,and commercial fields. They can be tremendously useful in providing exact and trustworthy information on people's activities and behaviors, thereby ensuring a safe and sound living environment. It may be that the smart wearable sensors technology will *transfigure* our life, social interaction and activities very much in the same way that personal mainframe shave done a few decades back.

Wearable sensors in the form of panic buttons for emergency help have been in use for a long time and are a massive commercial success. Of course for proper utilization the person needing help should be aware and fit enough to press the button. Most importantly, the panic button should be light in weight so that it is happy to wear .In recent times there has been a flow of usages of wearable sensors, especially in the health check sciences, where there are a lot of different applications in monitor physiological activities. In the medical field, it is possible to monitor patients' body temperature, heart rate, brain activity, muscle motion and other grave data It is important to have very light sensors that could be dog-eared on the body to perform typical medical monitoring. It is promising to measure the blood pressure using wearable sensors through a adapted volume- oscillometric technique which eliminates the need for an hot-air balloon pressure cuff and by the use of earphone and mobile device .In the area of sport and instruction there is an escalating trend of using various wearable sensors. Something, for example ,measurement of sweat rate which was possible only in the laboratory based system a few years back is now possible using wearable sensors .The use of wearable sensors has made it possible to have the necessary treatment at home for patients after an attack of diseases such as heart-attacks ,sleep apnea, Parkinson disease and so on. Patients after an operation usually go through the recovery/remedy process where they follow a harsh routine. All the physiological signals as well as physical activities of the patient be possible to be monitored with the help of wearable sensors. During the cure stage the wearable sensors possibly will provide audio feedback, virtual actuality images and other rehabilitative services. The system can be tuned to the requirement of individual serene. The whole activity can be monitored remotely by doctors, nurses or caregivers .A significant amount of

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research is currently undergoing in the development of a smart sensing system to detect falls of aged within the home . Falls are the single largest cause of injury in New Zealand and it may be true for any added country. In New Zealand one in every three people over the age of sixty five years has a fall every year and it increases to one in two for the age of over eighty years go downs may lead to several major health problems for the elderly and immediate help needs to be provided to reduce the risk of complications. In the absence of quick help, the elderly may suffer pain, go through exciting misery and even develop other medical complications such as dehydration, hypothermia and so on. The wearable smart panic button can also provide a rational peace to the elderly .Christo Ananth et al. [5] discussed about Intelligent Sensor Network for Vehicle Maintenance System. Modern automobiles are no longer mere mechanical devices; they are pervasively monitored through various sensor networks & using integrated circuits and microprocessor based design and control techniques while this transformation has driven major advancements in efficiency and safety. In the existing system the stress was given on the safety of the vehicle, modification in the physical structure of the vehicle but the proposed system introduces essential concept in the field of automobile industry. It is an interfacing of the advanced technologies like Embedded Systems and the Automobile world. This "Intelligent Sensor Network for Vehicle Maintenance System" is best suitable for vehicle security as well as for vehicle's maintenance. Further it also supports advanced feature of GSM module interfacing. Through this concept in case of any emergency or accident the system will automatically sense and records the different parameters like LPG gas level, Engine Temperature, present speed and etc. so that at the time of investigation this parameters may play important role to find out the possible reasons of the accident. Further, in case of accident & in case of stealing of vehicle GSM module will send SMS to the Police, insurance company as well as to the family members.

## II.CONSTRUCTION OF THE HUMAN ACTIVITY MONITORING SYSTEM

The basic construction of the human action monitoring system can be represented with the help of a block diagram ;the simplest one is shown in Figure 1. Depending on the task of monitoring, different types of sensors are used. The raw documents from sensors are collected by a workstation. The data are processed and then displayed on a display. These types of simple wearable maneuvers are used by normal people while jogging, running and other applications where the users look at the display to notice the slow values of the sensors. If the device has the feature of wireless data transmitting capability, the data can be located sent to a central station through a transceiver. The block diagram representation of a simple wearable wireless device is shown in Figure 2. The data may or may not be entirely processed at the pick up end but most of the data are kept, processed in the computer

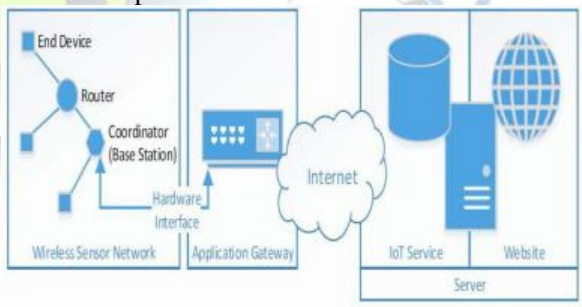


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Fig. 3. The block diagram representation of the Human Activity Monitoring (HAM) system [18]. Fig. 4. Picture of the developed wearable physiological parameters monitoring system [4], [18].

and wide display is probable either in a graphical format and/or as a numerical value. Depending on the difficulty, the results may be

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obtainable through an access of a website from a remote place. The block diagram representation of a developed biological monitoring system is shown in figure 3.The monitoring system may consists of many sensors to measure physiological parameters such as body temperature, heart-rate etc. The picture of
the real developed wearable physiological monitoring system is shown in figure .
The system contains of temperature sensor to measure the skin temperature, heart-rate sensor as well as accelerometers to sense any fall that may happen. All the measured physiological
data are composed by a microcontroller to progression and examine .Based on the processed data the central regulator may either generate a caution message to the caregiver based on the
current biological situation of the individual monitored and/or may support to detect early virus and any possible health threat [19].

III.SENSORS FOR HUMAN ACTIVITY CHECKING

In this section we will analysis a few sensors which are normally used for monitoring dissimilar human activities .Sensors are ultimate elements of the whole monitoring
system and should size the physiological parameters of interest truly and reliably over a long duration. The fast development of microelectronics, micromechanics,
integrated optics and additional related knowledge has permitted the development of various kinds of clever sensors to sense and measure data more powerfully and faster, with lower
energy feeding and less processing resources .Body high temperature is one of the common physiological parameters measured by wearable sensors for human activity

DEDUCTION

The paper has reviewed the informed literature on wearable sensors and devices for checking human activities. The
human activity monitoring is a pulsating area of research and a lot of marketable development are reported. It is expected that many more less-weight, high-performance wearable devices will be obtainable for monitoring a varied range of activities. The tasks faced by the current design will also give a talk in future devices. The development of light-weight physiological sensors will top to comfortable wearable devices to monitor dissimilar ranges of activities of populations. Formal and Informal review forecasts an increase of interest and consequent usages of wearable devices in near future, the cost of the devices is also projected to fall resulting of wide application in the society.

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