A Real Time Health Monitoring and Tracking of Soldiers using (IoT)

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Abstract— The paper is based on Internet of things(IoT) for health monitoring and tracking system for soldiers. The GPS is used for transmitting location of Soldier to the base station. These health parameters and location are transmitted to base station using IoT. Using these information we can save valuable soldiers life.

Key words: Internet of Things (IoT), GPS, WSBAN's

I. INTRODUCTION

The world in which we live in is not perfect this means that countries need armies and advanced technologies and they also tend to go to war with each others .Countries that faces threats from within and outside their borders have to deal with different security risks. Thus kind of reality forces countries to raise powerful armies to protect and defend their interests. Real time continuous monitoring health parameters and tracking location of soldiers using GPS. Communication techniques used which Soldiers can communicate with base station e.g Bluetooth, GSM, Zigbee, RF transmitter. Heartbeats, Temperature of soldiers are measured using pulse rate sensor and LM-35 temperature sensor and tracking current location of soldiers through GPS. These health related parameters and location are transmitted to base station using IoT. Further soldiers can be guided for correct direction during operation using GPS.

II. LITERATURE REVIEW


In this paper they have used Waspmote which has embedded GPS module for transmitting location of Soldier to base station. It is used for both the roles transmitter as well as receiver purpose. It also has ability for integrating modules like Zigbee, GPS and various sensors. They have used pulse sensor monitoring health of Soldiers.


In this paper they had focused on health monitoring and tracking location of Soldiers. Soldiers are not able to get help when they are injured during war. They want to know their location when they are lost. The system includes several modules like ZigBee, GPS, Temperature sensor, HeartBeat sensor and ARM microproessor.

“Health Monitoring and Tracking of Soldier using GPS” Pavan Kumar, Ghadge Rasika,Vidya Patil and Sonali Bobade.

They got idea from Mountaineers they uses their wrist watch to know their location, to know the temperature of surroundings.

III. PROPOSED SYSTEM

A. The Soldier Unit

The soldiers unit consist of GPS that can acquire location of the soldiers. The longitude and latitude of soldiers are retrieved at base station and it is responsibility of GPS to guide the soldiers. Heartbeat and temperature are measured using wireless body area sensor network(WSBAN’s). During programming in Arduino threshold value is set and if values get fluctuated then action is taken from base station. All collected data are processed by Arduino. The only reason to use Arduino is that it is low cost, easily available with flexible interfacing capability. In case of the soldiers is injured the GSM is used for communication purpose and send notification to base station.

B. Control Room Unit

The measuring devices are connected to Pic Microcontroller and GSM plays important role in transmitting data to base station using HTTP protocol and saved in the database at base station.

The information from database are retrieved and displayed on Website.
C. Hardware Description

1) Heart Beat Sensors

It measures the change of volume of blood through organ body. Which find heartbeat using light intensity through the organ. The heart is measured in beats per minute (BPM) rate. BPM varies according to age like for Adults it varies from 60 to 100 bpm. The threshold value is set between 60 to 100 bpm.

2) Temperature Sensor LM35

It collects data from particular source and converts into understandable form. Normal human body temperature is 37°C. So threshold value is set in the range 30°C to 40°C.

3) GPS Receiver

GPS means Global Positioning System. It is a satellite based radio navigation system. GPS provides critical positioning capabilities to military, civil and commercial users.

4) Panic Button

A panic alarm is an electronic device designed to assist in alerting somebody in emergency situations where a threat to persons or property exists. A button in a critical system such as a nuclear weapon system used to quickly activate an extreme measure to mitigate an emergency situation.

IV. ADVANTAGES

1) High reliability.
2) Cost effective.
3) Fast and efficient.
4) There are no of ways which Soldiers can communicate with base station e.g. Bluetooth, zigbee, GSM, etc.

V. APPLICATIONS

1) In medical for patients.
2) A real time health monitoring and tracking of soldiers.

VI. CONCLUSION

In this way we have implemented a system which collects real time health related parameters and location of Soldiers that can be used to save valuable Soldiers life.

REFERENCES


