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SMART CLOTHES FOR SECURITY FORCES

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ABSTRACT

We sleep peaceably in our beds at night only because rough men stand ready to do violence on our behalf. We often see many soldiers using their lives without being properly able to share their location and health status till their last moment. In order to overcome this problem, we come up with a solution called Smart Clothes.

Smart Clothes is a device which shares Vital body parameters of the soldiers who is wearing it. This device contains GPS module, Temperature sensor, Heart rate sensor, and an ATMEGA328P microcontroller of Arduino UNO. In order to share all these parameters to the destination we are using GSM/GPRS Module

keywords : Smart clothes, vital body parameters, destination, ATMEGA328P microcontroller.

Ⅰ. INTRODUCTION

Body armor is protective clothing designed to absorb or deflect physical attacks. Able to stop multiple hits and save lives, they are essential to our military capability in the current conflicts. Many factors have affected the development of personal armor throughout human history. At times the development of armor has run parallel to the development of increasingly effective weaponry on the battlefield, with armorers seeking to create better protection without sacrificing mobility. With the development of capitalism and technological advancements armor became more available to the lower classes often at a cost of quality. Keeping all the above things in mind so many people have worked on and created effective armors. How well the design and implementation may be, each and every model has its own conflicts and backdrops. Here we go with our proposal called Smart soldier armor.

Ⅱ. METHODOLOGY

Hock Beng Lim, Di Ma, Bang Wang, Zbigniew Kalbarczyk, Ravishankar K. Iyer, Kenneth L. Watkin [1] had discussed on recent advances in growing technology, and on various wearable, portable, light weighted and small sized sensors that have been developed for monitoring of the human physiological parameters.

The Body Sensor Network (BSN) consists of many biomedical and physiological sensors such as blood pressure sensor, electrocardiogram (ECG) sensor, electro dermal activity (EDA) sensor which can be placed on human body for health monitoring in real time. In this paper, we describe an idea to develop a system for real time health monitoring of soldiers, consisting of interconnected BSNs. We describe the basic prototype of the system and present a blast source localization application.

In this paper, we have completed only an initial design of individual sensor nodes and developed a basic prototype of the system to collect the sensed data. In future, we will try to develop an integrated data management system and a web portal which will enable users to have easy access of data.

P.S. Kurhe, S.S. Agrawal [4] had introduced a system that gives ability to track the soldiers at any moment. Additionally, the soldiers will be able to communicate with control room using GPS coordinate information in their distress. The location tracking has great importance since World War II, when military forces realized its usefulness for navigation, positioning, targeting and fleet management. This system is reliable, energy efficient for remote soldier health monitoring and their location tracking. It is able to send the sensed and processed parameters of soldier in real time. It enables to army control room to monitor health parameters of soldiers like heart beat, body temperature, etc. using body sensor networks. The parameters of soldiers are measured continuously and wirelessly transmitted using GSM.

Ⅲ. MODELING AND ANALYSIS

3.1 Required materials:

In this project we use hardware components for building a required prototype. We use Arduino ATMEGA328P Microcontroller , it is main component in which all the components are connected to Arduino. DHT11 sensor is used to sense the humidity and temperature in the body and surroundings.

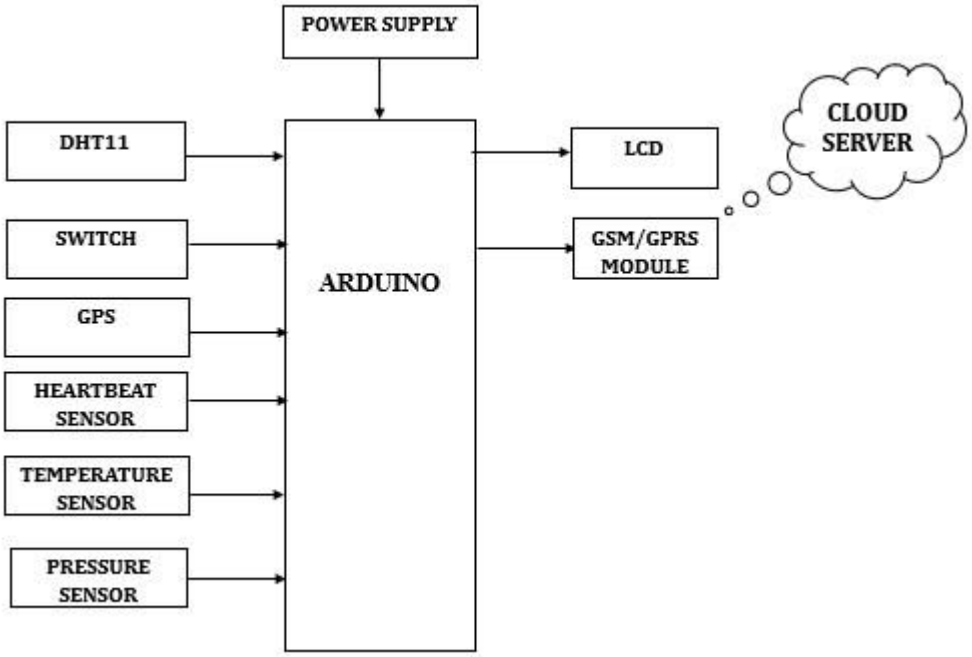
Temperature sensor, heartbeat sensor are used to measure temperature and heart rate . GPS,GSM module are used to locate the device and send the message using cloud server.

3.2 Proposed system:

In This Proposed System the soldier Health and Position Tracking System allows military to track the current GPS position of soldier and also checks the health status including body temperature and heartbeats of soldier.

The System also consists extra feature with the help of that soldier can ask for help manually or send a distress signal to military if he is in need.

The GPS modem sends the latitude and longitude position with link pattern with the help of that military can track the



current position of the soldier

FIG : Block diagram of Smart clothes

Ⅳ. RESULTS AND DISCUSION

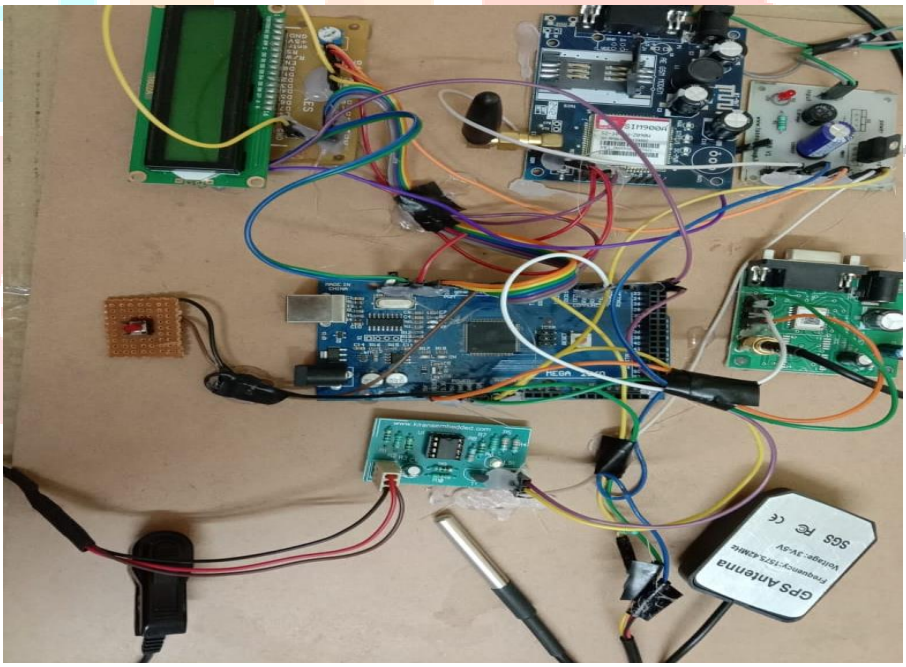


FIG: HARDWARE CONNECTION .

FIG: Output message sent to receiver

V. CONCLUSION

From above proposed system, we can conclude that we are able to send data which is sensed from remote soldier to army control room using GSM. The system is completely integrated and can track the location of soldier at anytime from anywhere on the earth using GPS receiver. This system helps to monitor health parameters of soldier using heart beat sensor to measure heart beats and temperature sensor to measure body temperature of soldier. This system helps the soldier to get help from army base station and/or from another fellow soldier in panic situation. This system provides the location information and health parameters of soldier in real time to the army control room.

This system is very useful to military forces during war as it can be used in battlefield without any network restriction. Thus, this system provides security and safety to our soldiers.

VI. REFERENCES

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