

# Soldiers Live Health Snooping And Tracking System Using IOT

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**Abstract-** Healthcare field is one of most delicate and important fields to be developed and enhanced by Smart systems designed to present sustainable medical interventions. The paper reports an Internet of Thing (IoT) based health monitoring and tracking system for soldiers. The proposed system can be mounted on the soldier's body to track their health status and current location using GPS. This information will be transmitted to the control room through IoT. The proposed system comprises of prototype design model wearable physiological equipment's, sensors, transmission modules. Hence, with the use of the proposed components, it is possible to implement a low cost mechanism to protect the valuable human life on the Warfield. To track the location of soldiers and monitoring their health conditions through ESP8266 and GSM.

**Keywords-** IOT, GPS , GSM MODULE

## I. INTRODUCTION

As we know, enemy warfare has a very important impact concerning to security issue of any state. The national security in the main depends on army (ground), navy (sea), air-force (air). The vital and important role is done by the military soldiers. There are many issues regarding the security of those soldiers. The soldiers of future guarantees to be lot of advance technologically in each crucial situation like warfare or any secret mission. In entire world, varies analysis platforms presently being organized. Just like the United States' Future Force warrior (FFW) and also the United Kingdom's Future infantry Soldier Technology (FIST) and they have an inspiration of constructing totally modern fight methodology. Helmet connected screens, accomplished of presenting maps and video from various group associates, forms of physiological sensors' to observance health parameters. These devices have capability to boost wakefulness according to situation, not only for the soldier in battle field, but to boot for all the military personnel at base station and that they will interchange data via wireless communication. However the most concern was that to form a light weight system, which may get desired results. One in all, the fundamental challenge in military operations is that the

troopers are not within the position to interconnect with base station. Additionally, the correct navigation between the soldiers plays precious role for careful prediction. The defense department of a country must be effective for the safety of that country, moreover as soldiers also should be effective. For this we are introducing a "Real time tracking and health monitoring system of soldier". This technique will be use full for soldiers, who involve in special operations or mission.

Further the report includes completely different parts associated with the working of various components utilized in our project, their operating, functionalities in the circuit, techniques, issues faced in creating the project and the solution of their issues, software used for various purposes (like programming, PCB designing, simulation), recommendations, future enhancements, prices, etc.

## II. LITERATURE SURVEY

1. GPS based soldier tracking and health indication system

In today's world, enemy warfare is a vital factor in any nation's security. One of the important and vital roles is Concerns relating to the security of soldiers. So for their security purpose, several instruments are mounted on them to look at their health status as well as ammunitions present with them .Bio-sensor systems comprise several types of small physiological sensors, transmission modules and processing capabilities, and can might therefore facilitate low-cost wearable unobtrusive solutions for health monitoring. GPS used to log the longitude and latitude so that direction can be known easily. These devices are being supplemental to weapons and firearms, and a few militaries such as the Israeli Army which are exploring the possibility of embedding GPS devices into soldiers vests and uniforms so that field commanders can track their soldier's movements in real time. RF module may be used for High-speed, short-range, soldier-to-soldier wireless communications that may be needed to relay information on situational awareness, tactical instructions, and covert surveillance related data during special operations reconnaissance and other missions .So by using these equipments we are trying to implement the basic

life- guarding system for soldier in low cost and high reliability.

## 2. A Wearable Health-Monitoring System for People at Risk: Methodology and Modeling

Wearable health-monitoring systems (WHMSs) represent the new generation of healthcare by providing real-time unobtrusive monitoring of patients' physiological parameters through the deployment of several on-body and even intrabody biosensors. Although several technological issues regarding WHMS still need to be resolved in order to become more applicable in real-life scenarios, it is expected that continuous ambulatory monitoring of vital signs will enable proactive personal health management and better treatment of patients suffering from chronic diseases, of the elderly population, and of emergency situations. In this paper, we present a physiological data fusion model for multisensory WHMS called Prognosis. The proposed methodology is based on a fuzzy regular language for the generation of the prognoses of the health conditions of the patient, whereby the current state of the corresponding fuzzy finite-state machine signifies this calculable health state and context of the patient. The operation of the proposed scheme is explained via elaborated examples in hypothetical scenarios. Finally, a stochastic Petri net model of the human–device interaction is given, which illustrates how additional health status feedback can be obtained from the WHMS' user.

## 3. GPS Based Advance soldier Tracking with Emergency Messages and Communication System

In today's world enemy warfare is very important concern in any nation's security. The national security in the main depends on army (ground), navy (sea), air-force (air). The important and vital role is compete by the military soldier's. There are several concerns regarding the safety of these soldiers. As soon as any soldier enters the enemy lines it is very vital for the army base station to know the location as well as the health status of all soldiers. In our project, the soldier can ask for directions to the army base unit in case he feels that he is lost. By using the location sent by the GPS, the base station can guide soldier to safe area & GSM can facilitate to communicate the Soldier unit with Base unit. By obtaining the accurate location of soldiers it will help the Soldiers to discuss about their war strategies and take guidance from Base unit. The various Health Sensors such as Temperature sensor, Heart rate sensors, Humidity sensors, Gas detection sensors will help to decide the health status of that individual soldier.

## 4. Implementation of GPS based soldier tracking and telemetry

In today's global scenario, enemy warfare is an important factor in any nation's security and safety. This vital role is played by the army soldiers. Along with the security comes concern about their safety. With recent advances in technology, various measures have been incorporated for monitoring of human physiological parameters. To achieve this, several body sensors are extensively used to continuously analyses their health condition in real-time environment. In addition to this, location of soldier is tracked using GPS when any of the soldiers enters the enemy location, it is important for the base unit to know the location and the health condition of all soldiers. By using the location sent by the GPS, the base station can guide soldier to safe area & GSM will help to communicate the Soldier unit with Base unit. By receiving the exact location of soldiers it will help the soldiers to prepare war strategies and take guidance from Base unit. The several Health Sensors such as Temperature sensor, Heart rate sensor will help to decide the health status of that particular soldier.

## 5. Tracking of Soldiers Location in any Environment using Intelligent Tracking and Health Indication System by using RSSI

In today's world, enemy warfare is a vital factor in any nation's security. One in all the very important and vital roles is contend by the army soldiers. There are several concerns regarding the safety of soldiers. So for their security purpose, several instruments are mounted on them to view their health status as well as ammunitions present with them. Bio-sensor systems comprise several varieties of small physiological sensors, transmission modules and processing capabilities, and can thus facilitate low-priced wearable non-obtrusive solutions for health monitoring. GPS is utilized to log the longitude and latitude so that direction can be known easily. These devices are being added to weapons and firearms, and some militaries such as the Israeli Army which are exploring the possibility of embedding GPS devices into soldiers vests and uniforms so that field commanders can track their soldier's movements in real time. RF module can be utilized for High-speed, short-range, soldier-to-soldier wireless communications that will be needed to relay information on situational awareness, tactical instructions, and covert surveillance related data during special operations reconnaissance and different missions. So by using these equipments we are trying to implement the basic life- guarding system for soldier in low priced tend high reliability.

### III. EXISTING METHOD

A real-time, ARM processor based approach for the monitoring and collection of temperature, heartbeat, ECG parameters of patients. ZigBee and GSM wireless technology were used to send current updates of patients to the doctor and then doctors can take immediate action against that patient. A wireless body area sensor networks (WBASNs) technology using ZigBee was reported to continuously monitor the human health and its location. RF based module to gather the live information of soldiers on the battlefield was proposed in. Further, a one-time password (OTP) based system was proposed to secure and authenticate the data processing. A Google map based approach was proposed to track the location of the soldiers. However, all these systems are stuck-up by one or more reasons like costly implementation, delay in response and bulky nature.

**IV. PROPOSED SYSTEM**

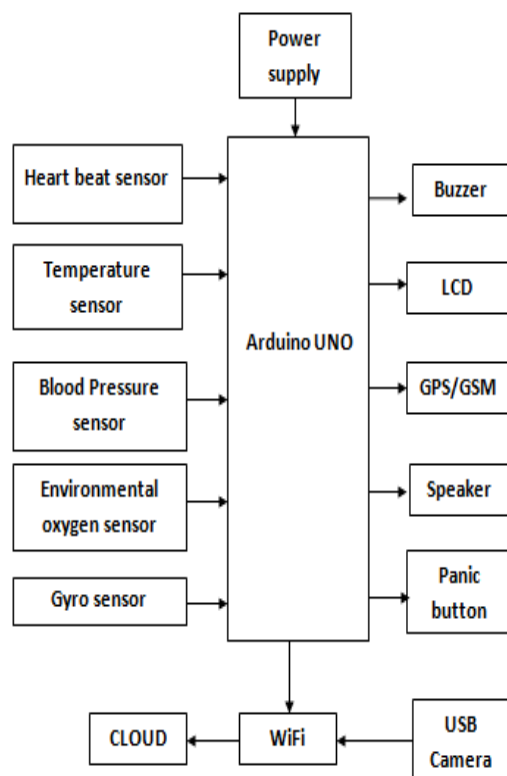


Fig: TRANSMITTER

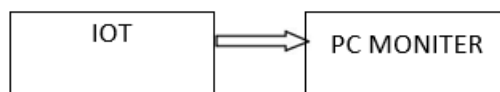


Fig: RECEIVER SECTION

In proposed system not only performs the task of health monitoring but also does the tracking of soldiers using

IoT. The control room can acquire the details about the position and orientation of soldier from GPS. Even in case of losing their direction, it is the responsibility. of the GPS to guide the soldier in correct direction. The base station can access the current status of the soldier using IOT as the different tracking parameters of the soldier get transmitted via Wi-Fi module. This information will be stored on the Cloud and can be extracted on the PC of control room, as and when extracted. Based on these information, the authorities can initiate immediate action by deploying a medical, rescue team or any backup force for their help. Using various biomedical sensors like heartbeat sensor, temperature sensor, pressure sensor, and gyro sensor to identifies the soldiers position health parameters of a soldier is observed along with its surrounding environment condition observed. Arduino board is a low cost and easily available with flexible interfacing capability. So ATmega328P better than other processors. All the sensors details monitoring things peak website with help of IOT module (esp8266). The location will be identified by using IP camera or RF camera.

**V. SOFTWARE DETAILS**

Embedded C is a set of language extensions for the C Programming language by the C Standards committee to address commonality issues that exist between C extensions for different embedded systems. Historically, embedded C programming requires nonstandard extensions to the C language in order to support exotic features such as fixed-point arithmetic, multiple distinct memory banks, and basic I/O operations.

**VI. CONCLUSION**

The design was way more effective than we originally thought off at the start of our project. We tried following ethics in designing and implementation of the project. We won't claim that our circuit had 100% efficiency, as it did show some variance that we minimized to some extent. The good thing, we noted that there is a lot of possibility to make enhancements in this project. Our system is for one soldier. The communication between soldiers to soldier can be established. This system gives strength to the defense system of our country. So, we can accomplish that these types of strategies are very supportive for certifying security of the soldiers.

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