



# INTERNATIONAL RESEARCH JOURNAL ON ADVANCED SCIENCE HUB

e-ISSN : 2582 - 4376  
Open Access

## RSP SCIENCE HUB

(The Hub of Research Ideas)

Available online at www.rspsciencehub.com

Special Issue of First International Conference on Science, Technology & Management (ICSTM-2020)

### Soldiers health monitoring and tracking system using IOT and UAV

Hari Krishna J<sup>1</sup>, Pramothe R<sup>2</sup>, Anoint Joshua Paul J<sup>3</sup>, Abhishek S<sup>4</sup>, Prabhu T<sup>5</sup>

<sup>1,2,3,4</sup>Student, Department of Electronics and Communication Engineering, SNSCT, Coimbatore, Tamilnadu

<sup>5</sup>Assistant professor, Department of Electronics and Communication Engineering, SNSCT, Coimbatore, Tamilnadu

hari41014@gmail.com<sup>1</sup>

#### Abstract

*Abstract-For the past five years in Indian history there are totally 106 percent soldiers has lost their life during the terrorist attack so the checking of the soldiers health in a war and the observing during the terrorist attack are been so significant know a days. In the field of sensors the innovation has accumulated the tremendous development and numerous wearable body sensors (WBS) have been invented. In this paper we portray the system of WBS which will be mounted the soldiers jacket and the data from the WBS are been transmitted to the unmanned aerial vehicle (UAV) and for the explanation of strong communication the data are likewise been transmitted to the military truck. Furthermore, the data transmitted will be seen through the secured website in the receiver side so the communication between the transceiver will be the stronger one. The jacket consist of a body temperature & humidity sensor, heart beat pulse sensor, gas sensor, global positioning system (GPS) module and the medic space the outcome which appear in the web page where the precision are practically equivalent to the commercial device.*

**Keywords:** WBS, UAV, Military Truck, IoT

#### 1. Introduction

India has having the third largest armed force in the world but for the past five years the number of terrorist attack has been increased to 177 percent and total 106 percent soldiers has lost their life and a significant number of the soldiers also harmed during these incidents [1]. Due to the unavailability of on-time soldiers health data the army is facing more trouble know a days. The soldier death due to the injuries is more than the direct assassination of a soldier. In recent years the advancement in health monitoring framework like LorRaWAN, RF transmitter, GSM, walkie-talkie based system where been implemented but buy using these technology the military has been suffered from some drawbacks like high implementation cost, weak communication, huge setup so by overcoming this problem the strong communication, costless and the portable wireless

based system for monitoring the soldiers health is been proposed in this paper. The paper is put together up with respect to building strong communication in IoT System. The system build up of temperature & humidity sensor, heart-beat sensor, gas sensor and the GPS for monitoring the soldier location in the war or attacks the jacket additionally contains the medic space also. This overall system will been controlled by an IoT based microcontroller and the data will been transmitted to the two web servers at the same time to provide the strong data communication and the data from the WBS are been seen through the secured web page so the soldier health condition will been updated continuously in the web page.

The section II of the paper is the literature survey. Section III is the methodology of the paper section IV of the paper is about technology and section V is reason behind the paper. Section VI is about the application and the section VII is about



we have to screen trooper's health from the various sectors of the countries so it is not possible use the technology like LoRaWAN or the RF transmitters because it can be operated only in small range .On account of IoT also we need the network access it is impractical to give the high speed satellite internet to the soldiers in the battle zone. So in this paper we resolve this problem with the help of UAV and the military trucks this is been consider as the two servers where the UAV will be fly over the battle field and the military truck will be placed little away from the battle field the data collected from the module 1 will be send to the server 1 which is UAV and the module 2 data will be collected by the military truck which is server 2 the reason for providing the two servers to produce the strong communication in case of if any one of the server is been collapsed the data can be displayed through the another server immediately.

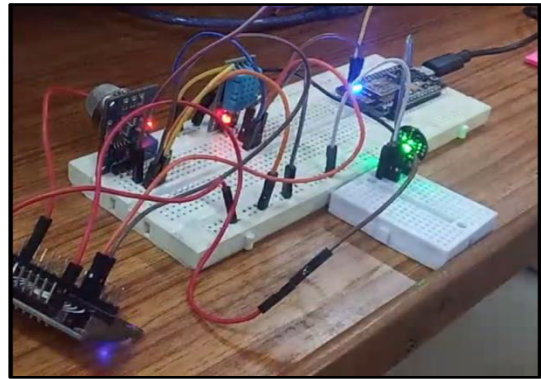
## 5. Application

It is tough to provide the High speed satellite internet service for a soldier in the battle field to monitoring their health and on the off chance that it is conceivable also the transmission rate and the receiving rate won't be excessively acceptable because of the significant distance [8]. So this paper overcomes this problem by using the UAV where it is almost like the router technology. The UAV will be placed above the battle field it will act like server and video taker the data collated from the module 1 will be uploaded to the UAV so the long distance transmission can be solved. In case if there is any collapse in the UAV server the soldier also provide the back up as server 2 which is the military truck where the module 2 data will be uploaded to it so the data communication problem can be overcome.

## 6. Implementation

The monitoring of soldiers health had become increasingly significant now a days. Numerous innovations has been actualized but all of it suffers from problems like huge cost, noise and weak communication to overcome this problem we proposed a system with low cost, strong communication, easy to carry and the attached medics so the implementation will be the easier

one.



**Fig.3. Demo model**

## 7. Purpose

There are totally 339 soldiers are been died in the terrorist attack between the past five years in this vast majority of the soldiers are been die through the injuries only .If the soldiers health are been monitored repeatedly and if the medic support is available the injured ones can be saved. In this paper we proposed the system monitoring of soldiers health through IoT and UAV it will be useful for monitoring the soldiers health repeatedly with the strong data transfer and the system also provided with jacket medic in case if the soldier health becomes more worse due to gun shots the jacket medic will be provided with coagulants and various medicine it arrest the blood leakage so the soldiers life can be saved in the attack or warfare's.

## Conclusions

The paper report about monitoring soldier health through IoT and UAV is tied in with monitoring the soldier's health in war or terrorist attacks. The overall system is been controlled by the IoT based module the system provide the strong communication between the transceiver. The overall implementation cost will be very low the data which is shown in the receiver side is almost equal to the commercial one. And there is a backup server if the server 1 is been collapsed the server 2 will screen the data and to monitored the location of the soldiers the GPS has been attached with the system. The paper concludes that if the system has been implemented in the country huge number of soldier lives can be saved in the war or terrorist attack.

Result

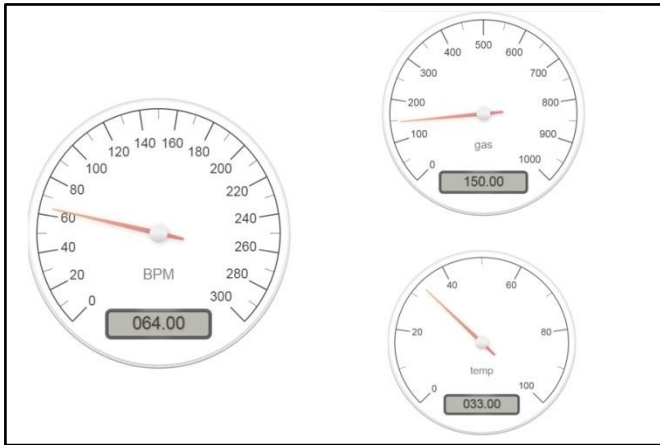


Fig.4. Output of the all the sensor from server 1 web page

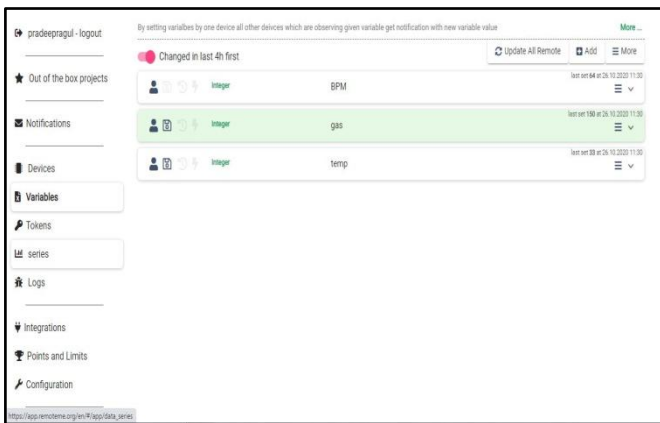


Fig.5. Overall view of an output getting from the server 2 web page

Reference

[1] <https://www.moneycontrol.com/news/india/in-5-years-death-of-jawans-in-terror-attacks-rose-by-106-in-jk-3541241.html>

[2] Aashay Gondaliaa , Dhruv Dixitb , Shubham Parasharc , Vijayanand Raghavad ,Animesh Senguptae “IoT-based Healthcare Monitoring System for War Soldiers using Machine Learning” International Conference on Robotics and Smart Manufacturing (RoSMa2018)

[3] Patii. N, & Iyer, B. “Health monitoring and tracking system for soldiers using Internet of Things(IoT)”. 2017 International Conference on Computing, Communication and

Automation (ICCCA).

[4] Rajeew Ranjan, Shirshu Varma. “Object-oriented Design for Wireless Sensor Network assisted Global Patient Care Monitoring System” International Journal of Computer Applications

[5] Prof. Hemant Shinde, Deepak Choudhary, Hrushikesh Gade, Supriya Shendkar, Omkar Gupta. “A Real Time Health Monitoring and Tracking of Soldiers using (IoT)”. International Journal for Scientific Research & Development

[6] Dineshkumar Jaiswar , Sanjna S. Repal. “Real Time Tracking and Health Monitoring of Soldiers using ZigBee Technology: a Survey”.

[7] I.F.Akyildiz, W.Su, Y.Sankarasubramaniam, E.Cayirci. “Wireless sensor networks: a survey”.

[8] <https://inc42.com/buzz/indian-army-looks-to-improve-internet-connectivity-in-far-flung-areas-for-soldiers/>