



e-ISSN: 2319-8753 | p-ISSN: 2347-6710

IJIRSET

International Journal of Innovative Research in
SCIENCE | ENGINEERING | TECHNOLOGY

INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

Volume 12, Issue 4, April 2023

ISSN INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA

Impact Factor: 8.423

9940 572 462

6381 907 438

ijirset@gmail.com

www.ijirset.com



Health and Position Monitoring System of Soldier Using IOT

Mrs.Pranitha¹, Mr.Rahul K², Mr.Arthik Shetty³, Mr.Hrushikesh Rao⁴, Mr.Vinayak Naik⁵

Assistant Professor, Dept. of Information Science and Engineering, Yenepoya Institute of Technology, Moodabidri, Mangalore, Karnataka, India¹

Students, Dept. of Information Science and Engineering, Yenepoya Institute of Technology, Moodabidri, Mangalore, Karnataka, India²³⁴⁵

ABSTRACT: The Security of the country depends on the Soldier of the country, The health of the soldier must be taken utmost care mainly during the natural disaster on the boundaries, Wars or on some mission. Various technologies and developments have been introduced and developed by the government of a particular country. The key challenges is Monitoring the health and position of soldier using Network to communicate. In this paper the existing technology for health and position Tracking of soldier is improved to access the data and communicate using offline by Wifi module that enables to stay connected even during network issue.

KEYWORDS: EmbeddedC, Esp8266 Wifi Module, Parameters, Network

I. INTRODUCTION

The science and technology is Developing in faster Rate with new inventions, research and with advance level of their Development. These advance technologies are strongly adapted by defense services to provide some safety systems to our soldiers.

The security of the nation is the most important matter for the country. nation's security depends on the soldiers. It is impossible to protect the nation without soldier. war is an issue in any nations secretary, soldiers play an vital role in the country's good being there are many concerns regarding the safety of soldiers this project is meant to identify the soldiers with health issue in the warfield or any othe missions and provide them with immediate healthcare and support. During the war or mission the soldier may accidentally land up in the opposition location without his idea, then he may require instructions and direction to know his current location. Other than the wounded injuries in war, the soldier may also suffer from climate condition or personal health issue and fall sick, in such case if care is taken then the life of soldier can be saved. This can be made possible by using the IOT. This basically uses The health parameter such as heart rate, and body temperature are monitored and communicated with the control unit automatically. it also tracks the position of the soldier using GPS which is shared to the control unit.

The main objective of the system is to provide the real-time monitoring of soldier's health parameters and location tracking using IOT and GSM and GPS module. In critical situation it helps the soldier by providing a panic button which sends and emergency message. Depending on the message the control room takes the necessary action to save the life of the soldier. The main issue is Network loss causing error to communicate and access data, this can be achieved using ESP8266 Wifi module that can extend upto certain distance for off-loading information about the data. Failure to access of data may be concern and may put the life of a soldier in danger. though lots of development on existing system and research for new system has been carried out for the betterment of soldiers.

II. LITERATURE REVIEW

Archana Padikar A, Cinmayee C K et al., [1] proposed Health monitoring and soldier tracking System, The subjective of their paper is collect and process the physiological parameters from body of soldiers. here a mail is forwarded to the camp about the Gps position. the threshold values alert mail to the base camp along with the soldiers location. when the threshold value of temperature raises or lowers the cooler and heater will turn on simultaneously. when the pulse rate is normal or higher the alert message is sent along position of the soldier to the base camp. it also sends gas value above



the threshold value to the base station. the future implementation of them is giving power supply to the system using solar and also build an camera to the system.

Arshil Nadaf, Rachana R., Namira Rahaman et al., [2] this paper for the proposed system suggests that a message is sent to the contact number about the GSM and Gps setup. then the parameter deviation in soldier health and alert message is sent to come along the accurate location of the soldier. the protection of soldier is tracked by the gps anywhere on the globe and health device monitors health parameter and conditions which provide security and safety for soldiers. they implement it using a micro controller ATmega328 which is outdated and is slower. this can be developed using newer version. They implemented with slightly complex circuit and low power use .pic processor with low power decrease power consumption. the size of the modules are small and slightly less weight. it is useful for the soldiers in war field.

Hari Krishna J, Pramoth R et al., [3] according to the review the components used were Nodemcu wifi microcontroller and DHT11 the temperature with humidity measuring sensor that is low operating voltage device. this circuit had a complex connection due to more connections, the technology used is IoT and considers that Lorawan technology cannot be used due small range. it suggests that it is difficult to provide high speed satellite internet for access of soldiers in the war field. they used the UAV technology to solve long distance transmission. though the circuit is cost effective it could not have many features that could play critical role in soldiers protection.

Prof. Amruta V. Patil, Vaidehi Pradeep Doiphode et al., [4] IoT technology is the foundation of the suggested solution. The initiative used biosensors including temperature and heart rate monitors for continuous troop health records monitoring. The soldier's whereabouts is tracked via a GPS system. It is able to gather and process the crucial body metrics and location data from the body of the soldier. Buzzer will turn on when ambient temperature exceeds the threshold setting. When the temperature falls below the threshold value by a lesser or equal amount, the buzzer

IV. HARDWARE AND TECHNOLOGY USED This System consists of several modules to perform the Function.

Arduino uno

A. LM35 sensor

Lm35 sensor is a temperature detecting sensor, it provides the temperature parameters of the body .it has high accuracy percentage

C. GPS module

Global positioning system is widely used in tracking the position of a thing globally. it describes the position latitude and longitude of the globe through network.

D. Heartbeat Sensor

Arduino uno R3 is the latest variant of the system that acts as the Heartbeat sensor is the device it measure the heartrate Core of any IOT system. this is used to perform action that is by pulse rate specified as function embedding program.

E. ESP8266 WIFI-MODULE

This module helps accessing data for the longer range. the unique feature of this module is that it can work during network failure and is used as offline alternate

F. GSM MODULE

The purpose of gsm module is to access data online network through using Sim, it is used to send data through mssg to longer distance.

G. LED DISPLAY

Light emitting display is 12X2 segment display that is used for indicating various real time parameters



H. Fire Sensor

Fire sensor detects the fire around using the threshold value

I. GAS Sensor

Detects the gas level. when crosses the threshold Frequency it alerts.

J. Powersupply

AC adapters are used to connect the external Powersource for power supply for the system .it Also can be implemented using long shelf 12V Powersupply batteries

III. RESULTS AND OUTPUTS

Block diagram of proposed system

The combat injury soldier GSM based on stronger health The suggested system's goal is to determine the injured soldier's precise location within the conflict. A soldier's precise longitude and latitude are obtained through the GSM grounded soldier health and position shadowing system. The Arduino receives this data and is connected through a GSM modem to a computer. The Arduino collects precise position information from the GPS and uses a GSM modem to send an SMS to the relevant authority. The Arduino is attached to a TV display, which will cross-reference the entered data before it is sent over GSM.GPS to track the soldier's location, Temperature Detector (LM35), and Twinkle Detector (SEN11574) to monitor the soldier's health and With the help of Arduino, GPS and GSM modules will be started in order to facilitate communication between soldiers and the military.

A message is send on the registered number confirming about GSM and GPS configuration. Later as the normal body parameters deviates an alert of an message is send to base station along with the precise location of the soldier. If body temperature exceeds 40 and heartbeat is not in between 65 and 100 then GPS tracks the exact location of the soldier and sends an alert message to the authority by using GSM module.Same way the other sensors as heartbeat sensor if its less then 60 or more than 100, Gas sensor if gas level is sensed more than 80,and fire sensor senses fire respective procedure is taken.

IV . CONCLUSION

In this system GPS tracks position of soldier anywhere on globe and also other sensors monitors soldier's vital health parameters and environmental situation which provides security and safety for soldiers. This system is less complex circuit and it consumes less power. By use of PIC processor and low power requiring system consumes less power. Small sized and lightweight module are used in this so they can be carried around. Because of these reasons the system can be easily used by soldiers in battle field . And also the base station because they get the real time results of those soldiers health and locations.

REFERENCES

- [1] Puneeth Kumar D N, Archana Padikar A, Cinmayee C K, Chaithra E, Chethan,Soldier Health and position tracking system,IJERT 2020
- [2] Arshil Nadaf, Rachanaa R., Namira Rahaman Soldier Health and Location Tracking System,IJERT 2021
- [3] Hari Krishna J1 , Pramoht R2, Soldiers health monitoring and tracking system using IOT and UAV, (ICSTM-2020)
- [4] Prof. Amruta V. Patil, Vaidehi Pradeep Doiphode, Soldier Health Monitoring and Tracking System Using IOT and AES, JETIR June 2021
- [5] K. K. Kumbhare (ET.AL), Swati Umate, Suwarna Khadake, Rohini Wanjari, Mayur Shividharkar:
- [6] G.Harinee , R.Ramya, Soldier Health Care Monitoring & Tracking System Using IOT, IOSR Journal of Electronics and Communication Engineering (IOSR-JECE).



- [7] Mrs,Pallavi Kulkarni,Mrs Thripthi Kulkarni,Securing Health monitoring of Soldiers with Tracking system Using IOT.
- [8] V. L. Satyanarayana, Soldier Health Monitoring And Position Tracking System,International Journal of Engineering Applied Sciences and Technology,Vol. 5, Issue 2.
- [9] S. Rajarajan1 , D. Abirami2 ,P.Gayathri3, K.Yogeshwari4, Health Monitoring for Military Using Wearable Sensors,IJERT
- [10] Chaithra R L1 , Mamatha V2, Soldier Health Status Detection and Location Tracking System using Internet of Things,IJACT



INNO SPACE
SJIF Scientific Journal Impact Factor
Impact Factor: 8.423



ISSN INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

9940 572 462 **6381 907 438** **ijirset@gmail.com**



www.ijirset.com

Scan to save the contact details