IOT BASED SOLDIER HEALTH MONITORING & TRACKING SYSTEM WITH PANIC ALARM

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Abstract— Enemy warfare is a significant component in any nation's security in today's world. The army, navy, and air force are primarily responsible for national security (air). Soldiers have an important role in maintaining national security. Many people are worried about the soldiers' safety. For a country's security to be ensured, its military department must be effective. Soldiers who are on a mission or doing special operations will benefit from this technology. The soldiers' location, health, and other factors would be tracked via GPS (Global Positioning Systems). For continuous remote monitoring of troops' health, M-health technologies such as mobile computers, medical sensors, and communication technologies are employed.

Keywords— Temperature sensor, Global position system, Monitoring, Temperature measurement, Biomedical monitoring.

I.INTRODUCTION

The infantry soldier of tomorrow promises to be one of the most technologically advanced modern warfare has ever seen. Around the world, various research programs are currently being conducted, such as the United States' Future Force Warrior (FFW) and the United Kingdom's Future Infantry Soldier Technology (FIST), with the aim of creating fully integrated combat systems. Alongside vast improvements in protective and weaponry subsystems, another major aspect of this technology will be the ability to provide information superiority at the operational edge of military networks by equipping the dismounted soldier with advanced visual, voice, and data communications. Helmet mounted visors, capable of displaying maps and real-time video from other squad members, ranges of physiological sensors monitoring heart rate, core body temperature etc. These devices will improve situational awareness, not only for the host, but also for collocated military personnel who will exchange information using wireless networks. The challenge was to integrate these piecemeal components into a lightweight package that could achieve the desired result without being too bulky and cumbersome or requiring too much power.

II. LITERATURE SURVEY

1) "IOT SOLDIER HEALTH MONITORING & TRACKING SYSTEM WITH PANIC ALARM"

Niket patil and Brijesh Iyer
have proposed system which not only monitoring the health but also the tracking location of soldiers using IoT. They have not explained how the communication is established between the client side and server side, since Arduino is connection oriented, i.e it comes with USB port.R. Shaikh, and et. al. [2012] [15] have proposed 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

G. Raj et. al. [2014]
[14] have proposed RF based module to gather the information of soldiers on the battlefield. V.Ashok [2016] [6] has proposed a one-time password (OTP) based system to secure and authenticate the data processing. Jassas et. al. [2015] [8] have proposed an idea of integration of wireless sensor network and cloud computing for the information processing in real-time and speedy manner.S. Dixit and A. Joshi [2014] [13] have proposed a google map based approach to track the location of the soldiers.

III. METHODOLOGY

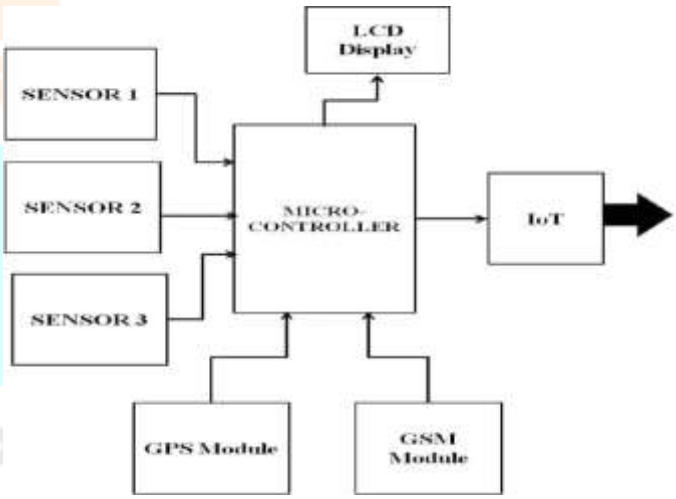

Fig.1 Block Diagram

Proposed system block diagram shown in figure, and the sensor utilized here are heartbeat sensor and temperature sensor, IoT module is Wi-Fi, GPS receiver for tracking the position of soldiers. Wi-Fi module is used to send the monitored real time data of soldiers to the cloud. The sensors, Wi-Fi and GPS receiver are interfaced to the Arduino Uno microprocessor using jumper wires and is programmed using C language. In this module, we have come up with an idea of tracking the soldier as well as to give the health status

of the soldier during the war, which enables the army personnel to plan the war strategies by using, the location sent by the GPS.

IV. WORKING

The circuit diagram of the IOT based soldier health monitoring & tracking system with panic alarm is shown in Fig.1. It is built around Arduino Uno (Board1),16×2 LCD (LCD1), Temperature Sensor(LM35), Heartbeat Sensor GPS Module, ESP8266 & few other components.

In the now-a-days, the protection of a nation is that the important factor and also the safety of nation depends on the military. Without the soldier it's impossible to safeguard nation. The soldier sacrifices their life for his or her country. Soldier entering their enemies border they lose their life due to lack of connectivity. Already India lost many soldier because of lack of medical backup and lack of tracking system. The lifetime of our soldier is extremely important so we've proposed a project called soldiers health monitoring and tracking system. Using this soldier health monitoring and tracking system we'll discover the health status of the soldier still because the precise location of the soldier. So this paper concentrate on tracking true of soldier from GPS, which is useful for room station to grasp the placement of soldier. Also we use biomedical sensors for monitoring the health parameters from the sensors used.

V. OBJECTIVES

- To detect the guts rate of the soldier.
- To detect the vital sign of the soldier.
- To detect the air quality of the environment.
- To detect the body position of the soldier.
- To send alert message to the room when soldier is in danger.

VI. RESULT

1. Only detect temperature and heart beat rate.
2. Delay in tracking location and reading parameters.
3. Use Internet of Things to detect the position and health parameters.

Fig.2 Result Displayed by LCD Display

PARAMETER	SENSED VALUES
HEARTBEAT	98 BPM
TEMPERATURE	34 C
HUMIDITY	26
LATTITUDE	18
LONGITUDE	73

Table. 1 Result Analysis

Fig.3 Hardware Implementation

VII. CONCLUSION

The proposed system can be mounted on the soldier's body to track their health status and current location using GPS. These information will be transmitted to the control room through IoT. The proposed system comprise of tiny wearable physiological equipment's, sensors, transmission modules.

VIII. ACKNOWLEDGEMENT

It is our pleasure to get this opportunity to thank our beloved and respected guide **Prof.P.B.Vyavahare & Prof.A.R.Masal** who imparted valuable knowledge of "Mini Windmill Power Generation & Saving". He is also kind enough to spare his valuable time to guide us in making our project. We sincerely thank him for his consistent guidance, inspiration and sympathetic to work, which we sure, will go a long way in our life. We owe sincere thanks, more than what we can express, towards our Head, Electrical Engineering Department, **Prof.V.P.More** for his constant inspiration, and assistance throughout the course.

IX. REFFERENCE

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