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REAL TIME TRACKING AND HEALTH MONITORING OF SOLDIERS USING GPS AND GSM MODULE

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Abstract - *The project provides the ability to track and trace the lives of soldiers lost and injured on the battlefield. It helps to reduce the time, search and rescue operations of the military control unit. This system enables military station to track location using GPS module as well health monitoring using wireless biosensor such as temperature sensor, heart rate sensor, and pressure sensor. The metal detector is also used here to detect land mines. Data from the GPS sensor and receiver is transmitted via the GSM module. Also, a soldier can ask for help from the control room and communicate with other soldiers present within the wireless transmission and reception range using the panic button*

Key Words: Biosensors, wireless transmission, location tracking, landmine detection system.

1. INTRODUCTION

In today's world enemy warfare is an important factor in any nation's security. National security depends largely on the military (on the ground), the ships (at sea), the air force (in the air). An important and vital role is played by the military. There are many concerns about the safety of these soldiers. As soon as any soldier enters the enemy lines it is very important for the military station to know the location and health status of all soldiers. In our project we have come up with the idea of tracking a soldier as well as providing a soldier's health status during the war, which enables military personnel to plan war plans. By using the location sent by the GPS modem, the base station can understand the position of soldier and the panic button helps to communicate with other soldiers. Landmine detection is also used here to avoid some accidents during wars.

2. PROPOSED SYSTEM

This system mainly consist of three units are healthcare, location tracking and army base station. For healthcare sector some biosensors are used, for location tracking GPS is used and for transmitting information's to the army base station GSM is used. Panic button is used by soldiers at emergency situations. Landmines can be detected by metal detector.
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3. BLOCK DIAGRAM

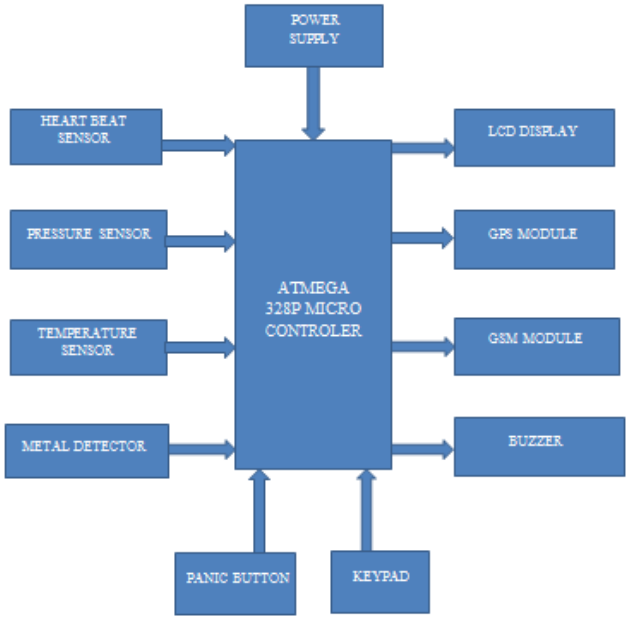

Fig -1: BLOCK DIAGRAM

3. METHODOLOGY

Heart beat sensor is designed to give digital output of heat beat when a finger is placed on it. When the heart beat detector is working, the beat LED flashes with each heartbeat. This digital output can be linked to a small controller directly to measure each Beats Minute (BPM) rate. It works on the principle of fluctuations of light with the flow of blood with a finger in each draw. The pressure sensor usually acts as a transducer; produces a signal as a function of a set pressure. Pressure sensors are used for control and monitoring of systolic and diastolic pressure of blood flow. The LM35 series is precisely integrated circuit sensors, whose output power is equal to the temperature of Celsius

(Centigrade), self-heating, less than 0.1°C in still air. The LM35 is rated to operate over a −55° to +150°C temperature range. Metal detectors are used to detect the buried landmines. The principle of electromagnetic induction is used in this system. The coils present in the metal detectors form an electromagnetic field. Mining is usually made of metal and this electromagnetic field attracts eddy current to metal objects.

This current eddy is creating its own electric field. Because of this field the opposite is done on steel coils. The metal controller senses this current and creates a signal indicating my presence. This document describes the sim com sim300 module hardware interface that connects to a specific application and its online interface. Since the sim300 can be integrated with a variety of applications, all the functions of the sim300 are described in detail. This document can help you quickly understand sim300 interface details, electrical and mechanical details GPS-634R" is a very smart GPS module with ceramic GPS patch antenna. The antenna is connected to the module via LNA

The module has a 51-channel detection engine and 14-channel track engine, which can detect up to 65 GPS satellites and transmit them to a precise location and time information that can be read over the UART port or RS232 serial port . The small size and high-performance GPS are heavily used for power. An alarm clock is an electronic device designed to help alert a person to an emergency situation where there is a threat to people or property. A panic alarm is usually controlled by a hidden alarm button that can be used to call for emergency help during battles. Some programs can also activate closed circuit television to record or view an event.

4. EXPERIMENTAL SETUP

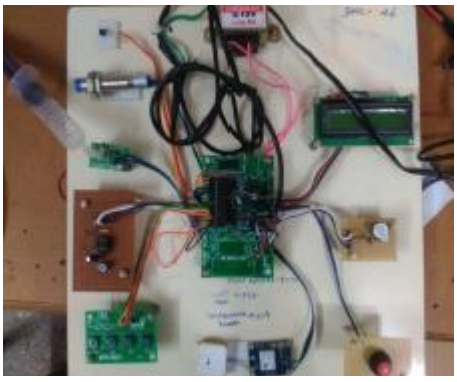

Fig - 2: Experimental Setup

5. WORKING

This paper has the idea of tracking a soldier and moving between soldiers to the soldier such as knowing their heart rate, temperature, their pressure during the war, enabling military personnel to plan military tactics. The base station finds the soldier's location from GPS. The program also provides information on land mines that help soldiers protect themselves from further dangers during wartime. Data obtained from biosensors and metal detectors is transmitted using a GSM module to both soldiers and a military station if something goes wrong. Information is obtained through an unusual SMS and military location.

6. CONCLUSION

GPS locates each soldier's location, thus providing military safety. As GPS coordinates are found almost everywhere in the world so the soldier can be tracked anywhere at any time. We can provide emergency assistance in the event of a soldier's poor health and by monitoring the soldier's health status. we can improve the safety of a soldier. This app also helps provide real-time information. Using this program can reduce war casualties. It also helps to provide sensitive information and warnings to the military and can put a lot of it into the weak areas at the moment. We can therefore conclude that these types of devices are very helpful in ensuring the safety of soldiers.

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