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Soldier's Health and Position Monitoring System

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ABSTRACT

Nowadays Defense services are rapidly growing towards new innovation with advance implementation. Soldier's health is more important because they are the defenders who protect our country. Every year some Soldiers have lost or injured. There are many concerns regarding the safety of these soldiers. This project gives an idea of tracking the location of soldier as well as health status of them during the war, which enables the army personnel to plan the war strategies. It is necessary for the base station to guide the soldier on correct path if he lost in the battlefield. The GPS receiver is used to log the longitude and latitude of soldier, which is stored in microcontroller memory. GPS Receiver receives and compares the signal from orbiting GPS satellite to determine geographic position. At Army Base station unit it gets the location of soldier through RF Tx/Rx. In a health care monitoring system it is necessary to constantly monitor the soldier physiological parameters. And using GPS with help satellite we can get the soldier exact location.

Keywords : Tracking, RF Module, GPS, Temperature sensors

I. INTRODUCTION

One of the most important tasks in military processes is that the Soldier, not able to interconnect with control room administrator. In addition, every organization wants to apply for certain work when they communicate over the n/w owned and worked with other organizations. Therefore, without cautious planning and coordination, one group cannot interconnect with the other groups. Present a problem faced by the soldiers are; Soldier wants to identify the location. They will not get assistance during terror situation and soldiers are not trackable.

So in order to overcome the above challenge this system has been designed. The aim of our project is to provide a **wireless system for tracking the location** of the soldier and observing the health status of the soldier. The temperature sensor is used to measure the temperature of the body is used to measure the heartbeat rate of the soldier.

II. METHODS AND MATERIAL

A. Literature Survey

Mr. Palve Pramod Proposed Gps Based Advance soldier tracking with Emergency Messages and Communication System. In this system, 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 will help to communicate the Soldier unit with Base unit. By getting the exact location of soldiers it will help the Soldiers to discuss about their war strategies and take guidance from Base unit. The Health Sensors like Temperature sensor will help to decide the health status of that particular soldier.

Audrey Giremus and Eric Grivel have Proposed A Boltzman machine to model the multipath environment for particle filtering based GPS Navigation. In GPS navigation, an accuracy of about 10 m can be currently obtained, but this performance can be strongly degraded in a multipath environment. The multipath directly impact the distribution of the additive noise corrupting the distance measurements between the satellites and the GPS receiver. They are modelled either as variance jumps if there is a direct path between the satellites and the receiver or as mean-value jumps otherwise. The originality of this approach is to take into account the spatial dependencies between

GPS measurements when modelling multipath occurrences. Indeed, if two signals from satellites have close directions of arrival, they are very likely to be simultaneously degraded by multipath. For that purpose, we suggest using a Boltzmann machine which provides a ”natural” setting to define interactions between the GPS measurements. Then, as the proposed model is strongly nonlinear and non-Gaussian, the mobile location and perform the multipath detection/estimation is jointly estimated by using particle filtering.

B. Block Diagram

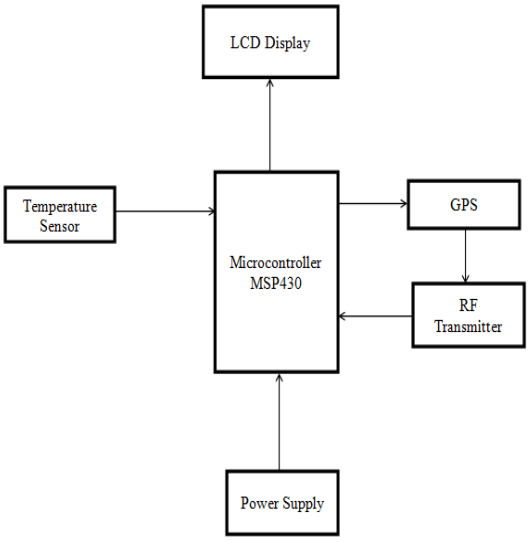

Figure 1. Block diagram

i) Soldier’s unit:

This paper has an idea of tracking the soldier and navigation between soldier to soldier such as knowing their speed, distance, height as well as health status of them during the war, which enables the army personnel to plan the war strategies. Base station gets location of soldier from GPS. It is necessary for the base station to guide the soldier on correct path if he is lost in the battlefield. The base station can access the current status of the soldier which is displayed on the PC. And hence can take immediate action by sending help for the soldier or sending backup for threat ahead.

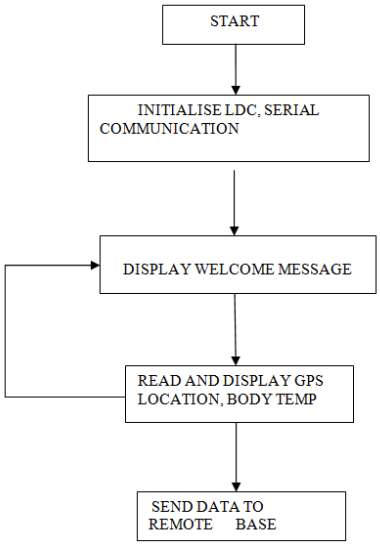

Figure 2. Flow chart for soldier unit

ii) Server Unit

This creates a data base that contains information about the soldier. Server is used to monitor the status of the soldier. And if there is any abnormality in the status of soldier it indicate a message.

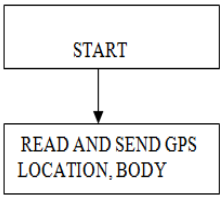

Figure 3. Flow chart for server unit

III. RESULTS AND DISCUSSION

Following conclusion can be retrieved from above implementation are:

1. Security and safety for soldiers: GPS tracks position of soldier anywhere on globe and also health system monitors soldier’s vital health parameters which provide security and safety for soldiers.
2. Continuous Communication is Possible: Soldiers can communicate anywhere using RF Tx/Rx which can help soldier to communicate among their squad members whenever in need.
3. Less complex circuit and power consumption so in this way concept of tracking and navigation system is very useful for soldiers when they are on military field during war. And also for base station so that

they can get real-time view of soldier's on field displayed on PC

IV.CONCLUSION

The "SOLDIER TRACKING AND HEALTH MONITORING SYSTEM" is an effective security and safety system which is made by integrating the advancements in wireless and embedded technology. It helps for a successful secret mission. This system can be used in critical conditions. The most significance in this is implementation of M-Health. By implementing this system we can improve the security of our country this also help to improve the safety of the soldier. This system also helps to provide real time video information. Using this system we can reduce casualties of war. It also helps to giving critical information's and warnings to the soldiers and can apply more of them to the current weak locations. This strengthens the defense system. Thus we can conclude that these kinds of devices are very helpful for ensuring security to the soldiers.

V. REFERENCES

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