International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
Vol. 3 Issue 4, April - 2014

Railwayline Tracking System for Reducing Animal Accident

R. Rathish
Department Of Information Technology And Engineering
Jawahar Engineering College

S. Prabhu
Department Of Information Technology And Engineering
Jawahar Engineering College

S. Tharani
M.Tech-Computer Science And Engineering
Srm University

***Abstract*— More than 1,177 elephant deaths were reported between 1999 and 2009.Of these, 434 elephants died of electrocution and 106 in train accidents. To eliminate the frequency of this death ratio, we have introducing Railway line tracking system. Especially for elephant due to slow reflexes. The scope of this project is to have a sensing mechanism which locates the location of objects in the track and thus making safer for the lives of wild in the track avoiding accident. The object movement is sensed by using sensors of humidity. There is also a GPS locating device for locating objects in the track. The humidity sensor which monitors the objects presence and it informs the centralized system and incoming train. Thus it avoids accident and saves lives of the animal. This project is easy to implement. The probes are activated only when the trains are in a zone of incident around some 5 km else they remain idle.**

Keywords*— Humidity sensor, GPS, Probes, Transmitter, GPS tracking software installed in computer of mobile device.

I. INTRODUCTION

Railway line tracking system in forest area is to minimize the accident saving lives of the Wild. With these sensors humidity is sensed. While the object crossing towards the sensor.When they cross that sensor distortion produced and calculate the water level of that object and create the pulse graph according to their level of intensity. The pulse is generated send through GPS transmitter.the transmitter is tracked by satellite. The graph and tracked position are send to server and we can see in computer are else in mobile realtime.

II. SYSTEM MODEL

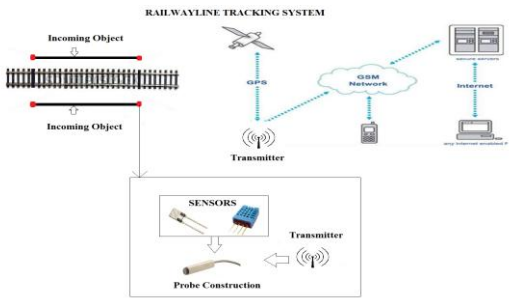


FIG 1: SYSTEM MODEL

Railwayline tracking system in this system according to track besides probes are placed vertically. Each probe consists of sensors and transmitters. Sensors like temperature and humidity sensor and transmitter .which are fitted inside the probes. Each probes are long iron post like structure on the each tip of the probes sensors are situated with transmitter which send always the graph signal to server with help of satellite tracking and then software in system is use to display the graph modulation and global positioning of that probe .These connection also contain automatic sensing technique only switch on when train start to move on these track on 5km distance otherwise system remain idle.Graph produced when distortion it may be make a big difference between ordinary graph.so with that we can relate the graph and come to an conclusion it must be an elephant because elephant as large body shape and also which contain larger amount of water substance inside the elephant so we can find the graph changes and we also find which segment of the track is distorted using GPS.

III. MODULES

- **HUMIDITY SENSOR MODULE**
- **GPS MODULE**
- **GRAPH GENERATION MODULE**

A. HUMIDITY SENSOR MODULE

Humidity is the presence of water in air. The amount of water vapor in air can affect human comfort as well as many manufacturing processes in industries. The presence of water vapor also influences various physical, chemical, and biological processes. Humidity measurement in industries is critical because it

may affect the business cost of the product and the health and safety of the personnel. Hence, **humidity sensing** is very important, especially in the control systems for industrial processes and human comfort.

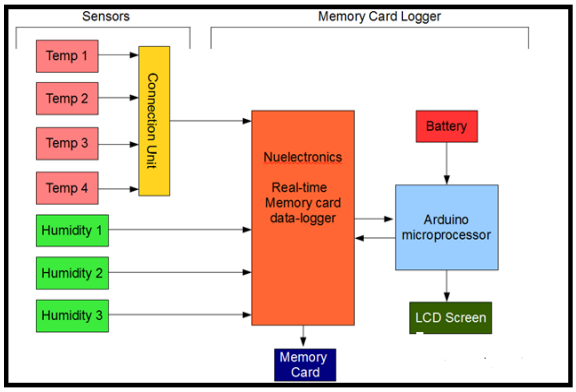
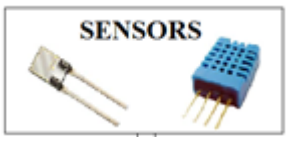


FIG 2: HUMIDITY SENSOR

Controlling or monitoring humidity is of paramount importance in many industrial & domestic applications. In semiconductor industry, humidity or moisture levels needs to be properly controlled & monitored during wafer processing. In medical applications, humidity control is required for respiratory equipments, sterilizers, incubators, pharmaceutical processing, and biological products. Humidity control is also necessary in chemical gas purification, dryers, ovens, film desiccation, paper and textile production, and food processing. In agriculture, measurement of humidity is important for plantation protection (dew prevention), soil moisture monitoring, etc. For domestic applications, humidity control is required for living environment in buildings, cooking control for microwave ovens, etc. In all such applications and many others, **humidity sensors** are employed to provide an indication of the moisture levels in the environment.



→ WORKING OF HUMIDITY SENSOR

We can relate this sensor to pass through wards particular path of direction .The model shows that block diagram of humidity sensor .This block diagram contains temperature, humidity sensor. With connection unit this connection are passed through nuelectronics data logger with memory card use as to save the data for some time. Then nuelectronics connected to the arduino Microprocessor with LCD screen to find out the readings.

B. GPS MODULE

Fig 3: GPS MODULE

→ GPS FUNCTIONS:

The Global Positioning System (GPS) is a space-based satellite navigation. system that provides location and time information in all weather conditions, anywhere on or near the Earth where there is an unobstructed line of sight to four or more GPS satellites. The system provides critical capabilities to military, civil and commercial users around the world. It is maintained by the United States government and is freely accessible to anyone with a GPS receiver .The GPS tracking is device which functions on the GPS for finding or locating an object of thing which is it or missing

The system is designed in order to help navigation on the earth, air ,and water. The radio signals which are sending by the satellite will be received by the gps receiver which we have.this process will be done within a fraction of second and we will know the current location, speed and the direction in which our device which we are tracking are moving.

A GPS receiver is asystem which is designed in the device in positioning the device which we want within a second and also will calculate thespeed and the direction in which it travels and the current position of it with a speed of light. The GPS devices which are used for the civilian purpose are not having all the rights as that of military usage.

IV. GRAPH GENERATION MODULE

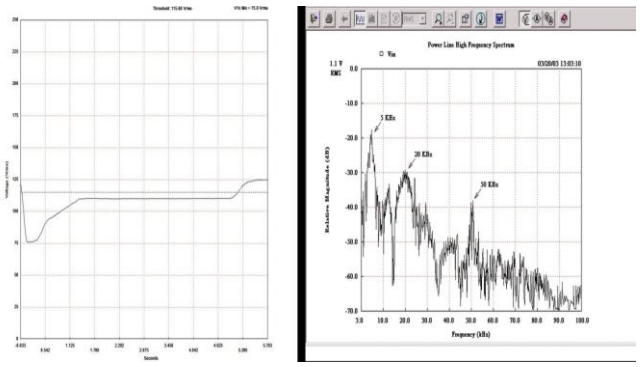


Fig 4: GRAPH GENERATION

When the object crosses and makes interrupt the interrupt generated is marked in graph. When they crosses their humidity value is calculated which is graphically monitored. But for ordinary conditions the graph distortion value is less but does not make much difference so the threshold is made. When the threshold exceeds the one we mentioned we can assure that the above

Object was found.the distortion graph is shown above at ordinary conditions and during interrupt

V. UPGRADED SYSTEM

Extra feature can be added with that probes like Red lamp and alarm .Redlamp glows when sensor distorted and alarm ranges when the sensor detected. Control measures can be taken for the prevention of the death of the animal using these mechanisms

VI. SUMMARY AND CONCLUSION:

The proposed system has been used to save the life of the wild animals and train accidents. The implementation cost of the project is less and it will be more efficient to save precious life of the forest animals. The sensor and GPS technologies are established as

worldwide the proposed system contains all the advantages of the technologies and very effective for saving forest lives.

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