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Coal Mine Safety Monitoring and Control Automation using Wireless Technology and Cloud Computing

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Abstract - *In our project coal mine safety monitoring and control automation using wireless technology and cloud computing. The increasing no of disasters all around the world, causing the loss of a huge number of lives and properties for avoiding that, we are collecting and sharing disaster information about damage area is the most important activity to support decision making in rescue processes. Disaster management system that use wireless sensor networks (WSNs) and IOT technologies to monitor in remote place.*

Key Words*: *RSSI, IOT, Zigbee, Microcontroller, Sensor

1. INTRODUCTION

Now-a-days, many accident are running in the coal mine places due happening of many natural disaster. It results in the destruction of so many human lives to rescue the human life in coal mining disaster like poisonous gas leakage, landslides, work injuries and any emergency time. By building an appropriate algorithm and give the solution for this type of problem. For intimating the identify problem with effective manner by giving the voice alert to each and every nodes. Through this method we can connect n number of node between them. Different environment parameters can be detected by sensors such as temperature useful for detecting mining, forest, building fire, toxic gases caused by an water level to detect and prevent floods, vibration level to detect chocks and many other data. Sensors can offer additional useful services.

2. LITERATURE SURVEY

2.1 EXISTING SYSTEM

P.Roja [1] the paper title as "IOT Based smart Helmet Air Quality Used for Mining Industry" this project focuses on a mine supervising system using IOT. This project aims at developing a wireless sensor network realized real time surveillance with early warning intelligence on harmful gases in mining area and used GPRS to monitor potential safety problems in coal protection using a IOT technology.When a natural calamity or a roof fall occurred, the cabling is damaged. So the reliability and long life of conventional communication system is poor these are all drawback of this paper. Shilpa Landle 1[2] the paper title as "Coal Mines Monitoring System Rescue and Protection humidity in underground coal mine place using wireless sensor network techniques using Kurtosis Index to identify best node placements in wireless sensor network environments.It has Less effective , less signal strength, High power consumption, poor precision, limited sensor coatings, high sensitivity to humidity these are all drawback of this paper.LI Yan –Fang[3] the paper title as "Fiber Laser Methane Sensor and its Application in coal mine safety" in coal mine safety of gas accidents are improving co, Since for the coal mine safety, this project implies to indicate. The system that can detect the methane of coal mine.High power consumption, poor humidity these are all drawbacks.

2.2 PROPOSED SYSTEM

The possibility of drastic change in the underground environment can lead the hazards to the miner working inside the mines hence there is minimum measure of the safety provided. A better sensing system as well as localization in order to improve in the safety of the mine personnel is developed. These can be realized by an appropriate of communication scheme technology can be proposed to be a better into communication scheme inside underground mines. In order to sense and measure in the parameters inside the dynamically varying environment parameters wireless of sensors can also be introduced. The integration of Radio frequency technology and in the wireless sensor network can improve the safety inside the mines. A real time of the localization system can be achieved via Radio frequency technology and real time of sensing system.

3. SYSTEM ARCHITECTURE

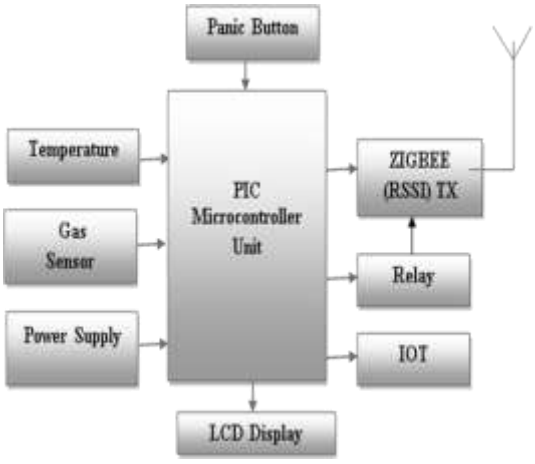

Figure -1: Block diagram of Transmitter

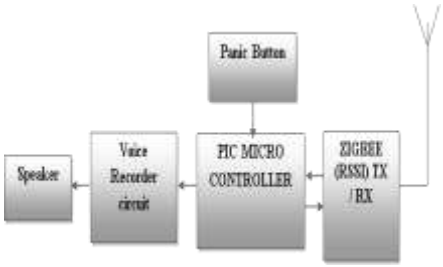

Figure -2: Block diagram of Receiver1

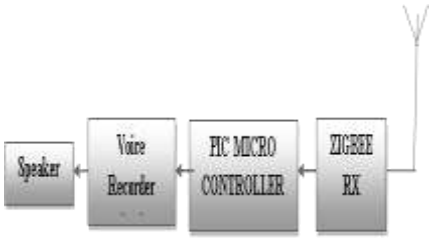

Figure-3: Block diagram of Receiver2

4. ADVANTAGES AND DISADVANTAGES

Advantages

This system is easier to operate manually.

More flexibility

Disadvantage

It is costlier

5. CONCLUSION

This system is displaying the parameters on the monitoring unit; it will be helpful to all miners present inside the mine to save their life before any casualty occurs. Alarm triggers when sensor values crosses the threshold level. This system also stores all the data in the computer for future inspection.

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