Amrutvahini College of Engineering, Sangamner
Department Of Electronics and Telecommunication Engineering

PROJECT ON

MINE SAFETY SYSTEM USING IOT

Presented by - 1) Aher Harshal Ramesh
2) Turkane Rupal Vilas
3) Varpe Gayatri Dattatray
4) Waghmare Namrata Sunil

Under Guidance of - Prof. V. R. Aware

• Introduction

Safety is the most vital part in mine industry. To avoid any type of accident take place in underground mines due to rises in temperature, increased water levels, and different gas leakage.

To enhance safety in underground mines, a reliable communication system must be established between workers in underground mines and fixed-ground mine systems.

• Block Diagram

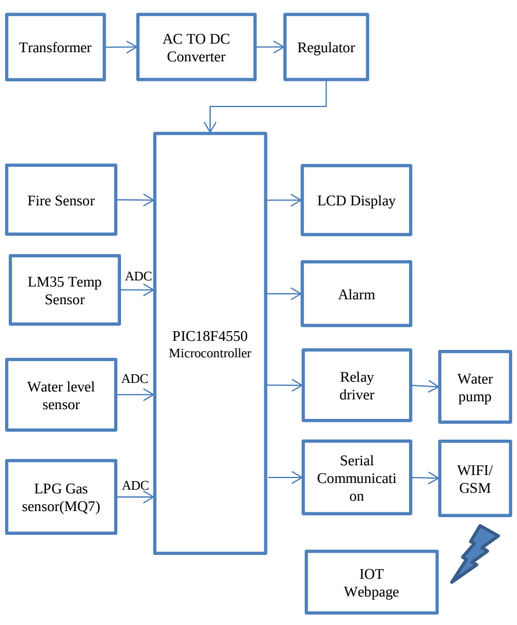

Fig 1. Block Diagram Of Mine Unit

• Aim Of The Project

Detection of different parameters within the mining environment and to provide communication establishment between sensors and IOT

• Objectives

1. Monitoring: To monitor the parameters like fire, temperature, water level detection, and gas detection.
2. Communication: Monitored data will be transmitted to the Internet of Things (IOT) web server.
3. Control: To control the temperature and the fire in the mine system using the sprinkler.

• Proposed Methodology

The working methodology describes in the form of flowchart

1. MINE UNIT

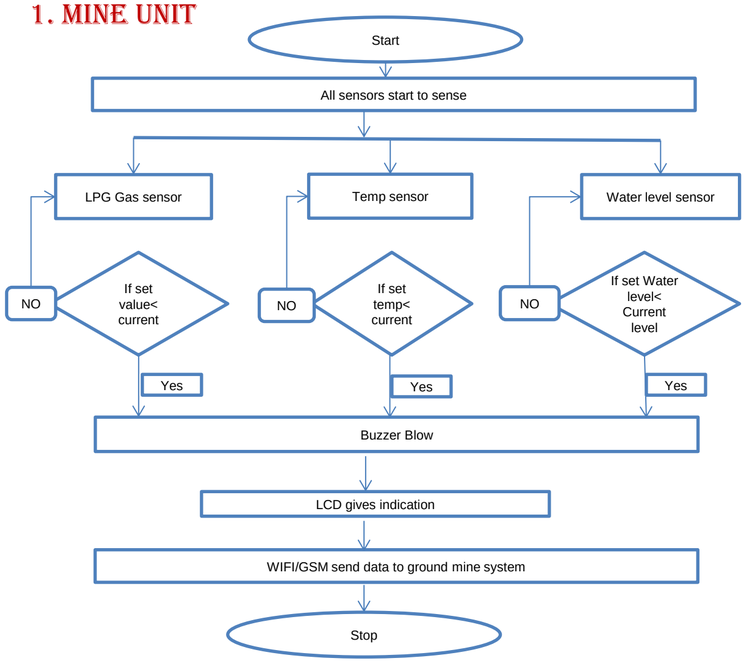

Fig 2. flowchart (mine unit)

• Application

1. For Underground Mine System
2. It provides emergency communication and response.
3. Construction.
4. Oil and Gas.

2.BASEMENT UNIT

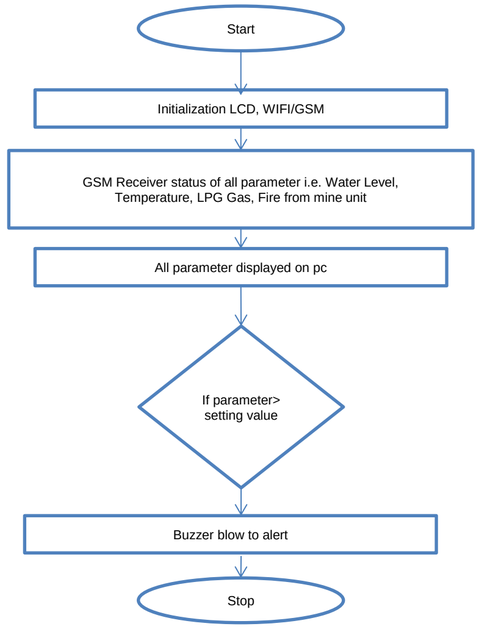

Fig 3. flowchart (Basement unit)

• Conclusion

It is the study of real-time monitoring of toxic gas and other parameters present in underground mines that have been analysed using wireless sensors.

It has developed a real-time monitoring system to provide a clearer and more point-to-point perspective of the underground mine system and also provide reliable communication using IOT between mine workers.

• References

1. "IOT-based Real-time Monitoring System for Coal Mine Safety" by Suman Kumar, et al. This paper proposes an IOT-based monitoring system for coal mine safety that uses various sensors to monitor gas concentration, temperature, humidity, and other environmental parameters.
2. Nisha Dube1,Prof.K.S.Ingle 2 PG Student, Dept. of ECE “Intelligent Mining: A Monitoring and Security System for Coal Mine Workers”, International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering (An ISO 3297: 2007 Certified Organization) Volume 5, Issue 1, January 2016.