

Survey on Implementation of Fire detection System

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1. LITERATURE SURVEY

This survey consists of various other papers related to this particular field and their individual nature of approaching to the problem and deriving the effective results are compared.

Ahmed Imteaj et.al :

They looked at the difficulties faced by production workers when fires are more likely to occur. They suggested a Raspberry Pi 3 system that can detect fire and provide information about the fire's location. To record the fire occurrence, various Arduino boards are connected to several motors and cameras by the Raspberry Pi. They talked on how to employ contemporary technologies to lessen the terribly tragic accidents brought on by fire in this. We have pooled our ideas and come up with the best solution using the findings from such investigations.

Ondrej Krejcar :

He proposed a model for location enhancement and personnel tracking using Wi-Fi networks. In this, he has represented the control system over concept that is used in handling information of location and control unit operations. The location of the user present in the building, is obtained through Wi-Fi access points. We have understood the feasibility of Wi-Fi networks a radio range for live tracking and to notify about the location of fire caught in an area.

Karwan Muheden :

They have studied the safety features in home and industrial areas. They have designed new model using WSN. Not only have they incorporated temperature and humidity sensors but also included fire and smoke sensors while developing the model. They present a preceding study of WSN is able to detect fire alarm. It is for setting up a wireless sensor network with three sensors. This study helped us in bringing ideas for home automation setup.

Kusprasapta Mutijarsa :

They have proposed a prototype for a centralized management system for homes or offices which helps better in managing the safety features. In this, home management system is required. This system controls the room lights by turning on and off automatically, it keeps the record of use of electronic device status, turning on and off the ac regulator automatically, it displays the room temperature in home. If fire is detected in the house, it turn on sprinkler at home, it supervises at home via surveillance cameras, take photos and store them including recordings of surveillance at home, it detects the movements of people at home, and provide notification when someone enters the house. Hence, one of the basic application for setting up, monitoring and controlling various sensors connected to a centralized unit for the controlling mechanism is evoked.

2. EXISTING SYSTEM

After analyzing the past studies, here are some perks to adore before setting up an automated fire management system. The salient features are as follows:

Determine the status periodically- The derived system should analyze the status of the fire accident at periodic intervals of time. This should work fine in real time as many industries are prone to fire accidents.

Transfer of information – Manually transferring information over automatic mechanism is not feasible down the line.

Analyzing the physical parameters – Unable to obtain the physical parameters such as the temperature, pressure at areas which are more likely for fire accidents.

Cumbersome repair -Tedious to determine structural damage.

Usage of technical skills for 3D plot - MEMS are used to get axis of the building block.

3. References :

- [1] Liu Yunhong, Qi Meini, "The Design of Building Fire Monitoring System Based on ZigBee-WiFi Networks" , Eighth International Conference on Measuring Technology and Mechatronics Automation, IEEE, 2016, pp-733-735

- [2] Ahmed Imteaj, Tanveer Rahman, Muhammad Kamrul Hossain, Mohammed Shamsul Alam, Saad Ahmad Rahat, "An IoT based fire alarming and authentication system for workhouse using Raspberry Pi 3" , International Conference on Electrical, Computer and Communication Engineering (ECCE), IEEE, 2017

- [3] Ondrej Krejcar, "Using of mobile device localization for several types of applications in intelligent crisis management", 5th IEEE GCC Conference & Exhibition, IEEE, 2009

- [4] Karwan Muheden, Ebubekir Erdem, Sercan Vançin, "Design and implementation of the mobile fire alarm system using wireless sensor networks", 17th International Symposium on Computational Intelligence and Informatics (CINTI), IEEE, 2016

- [5] Azka Ihsan Nurrahman, Kusprasapta Mutijarsa, "Intelligent home management system prototype design and development", International Conference on Information Technology Systems and Innovation (ICITSI), IEEE, 2015