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 studied the problems faced by factory workers in times when fire accidents are prone. They proposed a system using Raspberry Pi 3 which is capable of detecting fire and providing information about area of fire. The Raspberry Pi controls multiple Arduino boards which are connected with several motors and cameras to capture the fire incident. In this, they discussed about the modern technology that can be used to reduce extremely unfortunate accidents caused by fire. With the results from such studies, we have collaborated the ideas and turned to the appropriate solution.

Ondrej Krejcar :

He proposed a model for location enhancement and personnel tracking using Wi-Fi networks. In this, he has represented the control system 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 over 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 :

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[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

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