Survey on Industry-specific intelligent fire management system

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1. LITERATURE SURVEY

This study consists of numerous other publications that are relevant to this topic and compares how each one approaches the issue and arrives at useful conclusions.

Karwan Muheden :"Design and implementation of the mobile fire alarm system using wireless sensor networks"

They have researched the security measures in residential and commercial settings. They used WSN to create a new model. Along with temperature and humidity sensors, they also built in fire and smoke sensors when creating the model. They discuss an earlier study that shows how well WSNs can detect fire alarms. It is for establishing a three-sensor wireless sensor network. This research assisted us in developing concepts for home automation setup.

Shin-Juh Chen, Chris Hovde: "Fire detection using gas and smoke sensors"

This research aims to introduce a novel system based on gas and smoke sensors. Based on simultaneous measurements of smoke, carbon monoxide, and carbon dioxide, a fire detection system is created. The combination of the rate at which smoke rises and the content of either carbon monoxide or carbon dioxide offers a potential fire alaram algorithm to improve the accuracy of aviation smoke detectors and decrease time alarm. When compared to smoke operating alone, the fire system using the alaram algorithm spotted fires that were not detected by smoke sensors and alerted in less time.

Ondrej Krejcar : "Using of mobile device localization for several types of applications in intelligent crisis management"

He put forth a plan for using Wi-Fi networks to improve locate and track workers. He has illustrated in this the idea of a control system, which is utilised to manage location information and control unit activities. Through Wi-Fi access points, the position of the user who is now present in the structure is identified. We are aware of the viability of using Wi-Fi networks over a radio spectrum to follow live events and alert people to fires that have been started nearby.

Kusprasapta Mutijarsa : "Intelligent home management system prototype design and development"

A prototype of a centralised management system for homes or offices that makes it easier to handle the safety features has been put out by them. A home management system is needed for this. This system regulates the room lights by turning them on and off automatically, records the state of the

use of electronic devices, turns the AC regulator on and off automatically, and shows the temperature in the room. Sprinklers are turned on, cameras are employed to keep an eye on things, pictures and recordings of the surveillance are collected and stored, people's movements within the house are watched, and an alert is given when someone enters the house if a fire is detected inside. As a result, one of the essential uses for tying several sensors to a single, centralized unit for the controlling mechanism is shown.

Ahmed Imteaj et.al : "An IoT based fire alarming and authentication system for workhouse using Raspberry Pi 3"

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.

2. REFERENCES

[1] 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

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

[3] 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

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

[5] 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