

INDUSTRY-SPECIFIC INTELLIGENT FIRE MANAGEMENT SYSTEM

INTRODUCTION :

Nowadays, fire incidents have become a critical issue, which must be dealt with on time without any unnecessary delay to avoid the loss in lives and belongings. It is considered a fire situation when the monitored temperature exceeds 50°C. According to the national fire protection association (NFPA), two-third of U.S. household fires occur in premises with no working smoke alarms, alarms with no proper maintenance, or misplaced alarms.

This is the IOT (internet of things) based fire monitoring and controlling system which not only gives the real time information about the situation on the monitor but also takes the corrective action as per the need. In a publish and subscribe system, a device can publish a message on a topic, or it can be subscribed to a particular topic to receive message. Also it is perfect solution for internet of things application. Due to this all data can be stored in server and this data can be access by the Application program interface which we can display on the monitor and with the help of software the operator can visualize the condition at the time of fire accident.

LITERATURE SURVEY :

- (1) Ahmed Imteaj et.al. Studied the problems faced by factory workers in times when fire breaks out. 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.
- (2) Authors in 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.

- (3) **Building Fire Emergency Detection and Response Using Wireless Sensor Networks** Yuanyuan Zeng, Seán Óg Murphy, Lanny Sitanayah, Tatiana Maria Tabirca, Thuy Truong, Ken Brown, Cormac J. Sreenan Department of Computer Science, University College Cork .
- (4) **Ondrej Krejcar 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.**
- (5) **Authors in 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.**
- (6) **Avoidance of Fire Accident on Running Train Using ZigBee Wireless Sensor Network** R. Pitchai Ramasamy¹ , M. Praveen Kumar¹ , S. Sarath Kumar² and R. Raghu Raman³.

REFERENCES:

- [1] **S. D. Dissanayake; P. P. C. R. Karunasekara; , D. D. Lakmanarachchi; A. J. D. Rathnayaka; A. T. L. K. Samarasinghe, “ZigBee wireless vehicular identification and authenticate.**
- [2] **V. Jelcic; M. Magno; G. Paci; D. Brunelli; L. Benini, "Design, characterization and management of a wireless sensor network for smart gas monitoring," in 2011 4th IEEE Int. Workshop on Adv. in Sensors and Interfaces (IWASI), pp. 115-120.**
- [3] **Fire Safety in buildings by V.K. Jain**
- [4] **Design of water based fire protection systems by Robert M**
- [5] **F. He; Z. Du; Y. Sun, “Indoor dangerous gas environment detected by mobile robot,” in 2009 IEEE International Conference on Robotics and Biomimetic (ROBIO), pp. 396-401.**
- [6] **MS. Vidhy Khule, MS. Divya Dhagate and MS. Rajashree Kadam, “Design and Implementation of a fire detection and control system for automobiles using fuzzy logic”, ISSN: 2277-9655, April, 2017.**