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Fire Alert Intimation System Based On Sensor Learning

A. Anna Arasu[1], P. Jayanthi[2], C. Kanipriya[2], R.Sivaranjani[2]

[1]Head of the Department, Department Of Computer Science & Engineering, Mangayarkarasi College Of Engineering, Madurai, Tamil Nadu, India

[2]Department Of Computer Science & Engineering, Mangayarkarasi College Of Engineering, Madurai, Tamil Nadu, India

ABSTRACT

Fire accident as an unexpected and unwanted event that brings harm to social wealth and human life needs to be put a stop toed at all cost. In order to put a stop to losses accrued from fire accidents, various alarm systems have been developed such as smoke detectors, temperature sensor based systems etc. With the advancement of technology more automated fire tools are now available among which is this design. The availcapacity of GLOBAL SYSTEM FOR MOBILE APPLICATION technology is now include into the fire alarm system in order to combat and put a stop to the menace that could be caused by fire accident. The device will be able to monitor the temperature of the environment and send SHORT MESSAGE SERVICE aware to an inbuilt GLOBAL SYSTEM FOR MOBILE APPLICATION number when required, and make noisy sound to aware occupants on pending danger.

Keywords: Node-MCU(ESP8266),Smoke sensor,Flame sensor,Temperature sensor and Humidity sensor,GSM.

I. INTRODUCTION

Implant-An implant system is a devoted computer system plan for one or two specific functions. IoT is a system of interconnected computing devices that are provided with unique identifiers and the capacity to transfer data over a network without requiring human-to-human or human-to-computer interaction.An industrial fire is a form of industrial disaster which causes expansive harm to its sector. There are different ways in which this problem is caused such as electrical fire, flammable liquids, compressed gases, hot work, houseworking practices etc. The work environments in every industry pose unique fire problem hence there lie down some general issues peak in a danger of fire or blast in industrial complexes or manufacturing facilities. Put a stop to ensures that a small event or a small fire in a trash does not turn into a catastrophic event which can destroy a business or the lives of workers and a community

II. INTERNET OF THINGS

The Internet of things relate the network of physical items “things” that are implant with sensors, software, and other technologies for the aim of connecting and interchanging data with other devices and systems

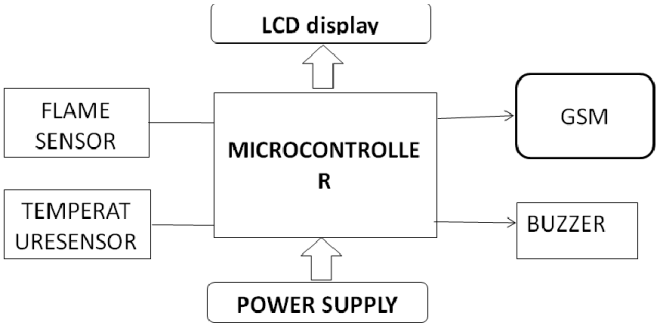
over the Internet. Things have develop due to the intersection of multiple technologies, real-time analytics, machine learning, commodity sensors, and implant systems.Established fields of implant systems, wireless sensor networks, control systems, automation (as well as home and building automation), and others all contribute to allow the Internet of things. In the user market, Internet Of Things technology is most comparable with products concern to the concept of the "smart home", as well as devices and appliances (such as lighting installation, thermostats, home security systems and cameras, and other home appliances) that support one or more usual environments, and can be controlled over devices associated with that environment, such as smartphones and smart speakers. IoT can also be used in healthcare systems.

There are a number of serious concerns about dangers in the growth of IoT, mostly in the areas of isolation and security, and consequently industry and governmental moves to address these concerns have start as well as the growth of worldwide standards.

III. WORKING

The modules excited with the power of 5v whereas the gsm module works on 12v supply. The ultrasonic sensor indicates the level of the bin which are indicated in centimeters. if the level bin is exceeded beyond the threshold level, the motor gets turned on. also, if there is any indication in the bin is presence with the gas, it intimates along with the level of the bin. These parameters are monitored through wireless by using the GSM as whenever the level reaches beyond the threshold value. The gsm follows the serial type of transmission which comes under the RS-232 Universal Addressable Receiver and Transmitter (UART) protocol which is addressed by the AT commands. proposes framework of low cost multi sensor and alarm system with intimation of actual hazard location. To take precautionary measure and to avoid fire hazards or destruction especially in industrial setup this system has been developed. This works in two possible steps. First step is to inform the owner about the fire initiating signal so as to alert and to get in action whatsoever required. And the second step is to alert instantly to fire fighters also in case fire broke out exceeding threshold values.

IV. BLOCK DIAGRAM



V. RELATED WORK:

In the previous systems, there would be monitoring of fire accidents happens by manual errors. The alert process takes time as there will be takes time to contact the first responders. This makes the vulnerable for both the human life and the environment.

VI. PROPOSED METHODOLOGY

In this project, during the system start up, the microcontroller tests all the hardware to confirm hardware errors. It then proceeds to shut down the GLOBAL SYSTEM FOR MOBILE COMMUNICATIONS module for proper power management. Subsequently, it begins reading the sensors and averaging their readings to eliminate errors and prevent false alarms. When any sensor reading goes out of the range considered normal, the GLOBAL SYSTEM FOR MOBILE COMMUNICATIONS module it brought online, allowed to acquire the network and a message is sent indicating which sensor. This gives the user a greater

awareness of the environmental parameters in his residence or office. If a blend of readings meets the preset criteria for a fire, an alert message is sent to the server. Note that: The system works as expected and the sensors produce repeatable, that is, similar output every time the environmental triggers, namely hot temperature and smoke pollution, occur within the model house. This indicates reliability. Also, the system easily identifies the zone in which the environmental anomaly originates.

VII. GSM

GSM is a mobile communication modem; it is stands for global system for mobile communication (GSM). The idea of GSM was developed at Bell Laboratories in 1970. It is widely used mobile communication system in the world. GSM is an open and digital cellular technology used for transmitting mobile voice and data services operates at the 850MHz, 900MHz, 1800MHz and 1900MHz frequency bands.

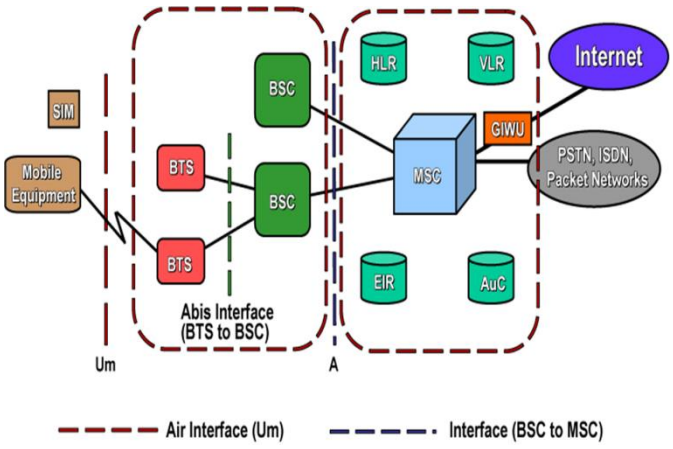


Fig 2: GSM Architecture

VIII. RESULT ANALYSIS

Fig 3: Alerting SMS Reached to Owner

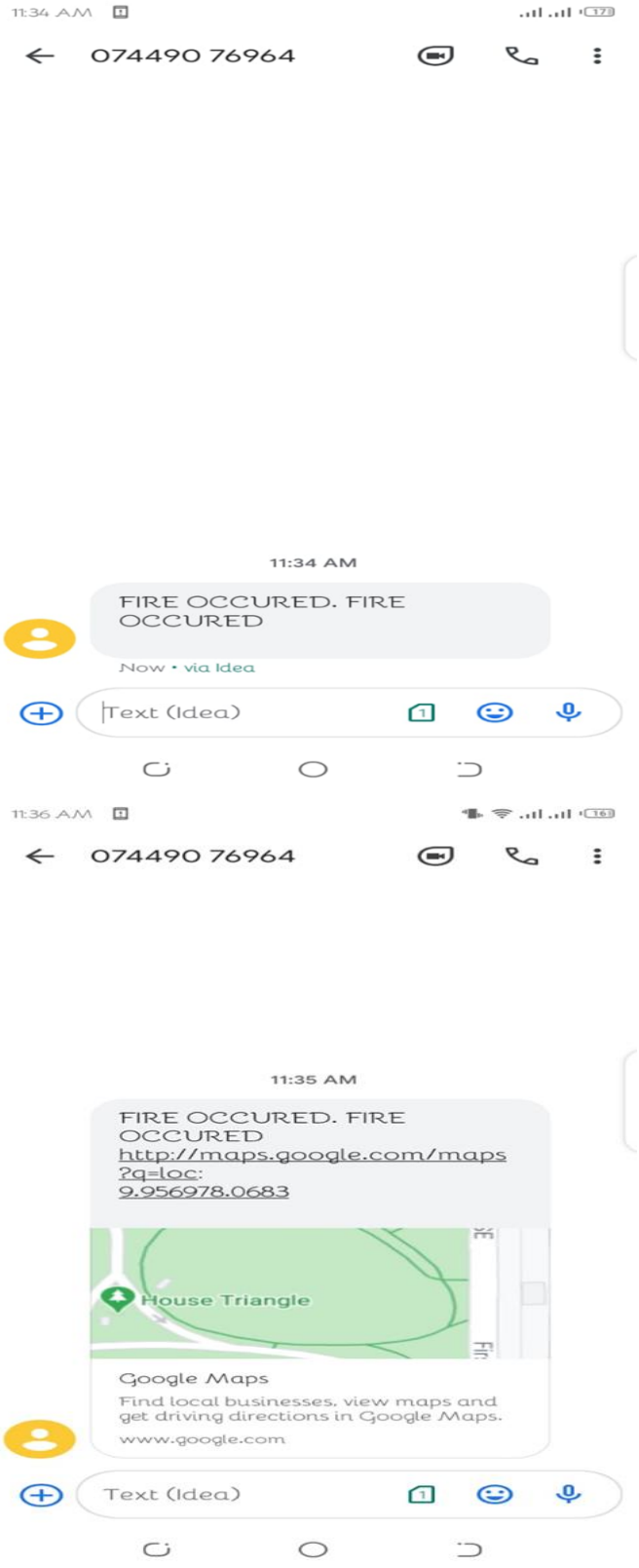


Fig 4: Alerting SMS Reached to Fire Fighter With Location Intimation

IX. CONCLUSION

Fire tragedy presents a great threat to human life and property. In view of this a low cost automatic fire alarm and hazard location intimating system for industrial application is designed and implemented. NodeMCU being the significant controller comes in action whenever signals from sensors are received and act accordingly to communicate with GLOBAL SYSTEM FOR MOBILE COMMUNICATIONS module to send SMS. Also it activates relay module to blow buzzer alarm at the local site area. This system provides an early fire warning which will help to prioritize the immediate rescue operations by owner and or fire fighters respectively so that damages will be reduced effectively.

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