**INDUSTRY-SPECIFIC INTELLIGENT FIRE MANAGEMENT SYSTEM**

**IDEATION:**

**1)OBJECTIVES:**

The primary purpose of fire alarm system is to provide an early warning of fire so that people can be evacuated & immediate action can be taken to stop or eliminate of the fire effect as soon as possible. Alarm can be triggered by using detectors or by manual call point (Remotely). To alert/evacuate the occupants siren are used. With the Intelligent Building of the rapid development of technology applications, commercial fire alarm market demand growth, the key is to use the bus system intelligent distributed computer system fire alarm system, although installation in the system much easier than in the past , but still cannot meet the modern needs, the installation costs of equipment costs about 33% ~ 70. The suggested technique in Fire alarm system used the addressable detectors units besides using the wireless connection between the detector in zones as a slave units and the main control unit as the master unit. The system shall include a control panel, alarm initiating devices, notification appliances, and the accessory equipment necessary for a complete functioning fire alarm system. In the wireless fire alarm, individual units are powered by primary & secondary batteries for the communication.

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and toxic gases and not to burns. Fire produces

poisonous gases that can spread rapidly and far from

the fire itself to claim victims who are asleep and not

even aware of the fire. Even if residents awaken, the

effects of exposure to these gases can cloud their

thinking and slow their reactions so that they cannot

make their escape. This is why it is so crucial for you

and your family to have sufficient warning so that

you can all escape before your ability to think and

move is impaired. In addition, more than half of fatal

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fires in homes occur when people Most victims of fire succumb to the smoke and toxic gases and not to burns. Fire produces poisonous gases that can spread rapidly and far from the fire itself to claim victims who are asleep and not even aware of the fire. Even if residents awaken, the effects of exposure to these gases can cloud their thinking and slow their reactions so that they cannot make their escape. This is why it is so crucial for you and your family to have sufficient warning so that you can all escape before your ability to think and move is impaired. In addition, more than half of fatal fires in homes occur when people are asleepThe fire alarm system can also be integrated with AC supply, access control, fire fighting systems, Building Management System (BMS).....etc. To indicate the area where fire exist fire indicating/fire alarm panels are used. So far, cables were used to integrate all the device of fire alarm systems, these cables carried the power & communication.

When we have unique address; therefore all these devices can be easily identifiable, controllable & networkable as required by the end users. Subsequent detector installation saves not only the cost of cabling, but also the time-consuming work associated with mounting & wiring even under difficult environmental conditions. The detector most suitable for the corresponding usage area is simply placed on the wireless base and/or wireless interface.

Wireless fire alarm system should meet the current requirements, easy to install, fast and cheap, without wiring of the building damaging the surface of the smallest on the functional changes in the characteristics of the easy adaptability.

Wireless automatic fire alarm system is a typical multi-sensor type of event-driven wireless sensor network (WSN), but with its special requirements.

System reliability, credibility, we must consider the indoor multi-path scattering, echo, interference, interruption, to deal with collision detection.

System works a minimum of 5 years life cycle.

Switchboard and must be two-way communication between detectors.

Alarm signal transmission time must be within 10 seconds.

System interference and failure detection time to less than 100 to reflect seconds.

To the design of high reliability, strong antiinterference ability of automatic fire alarm system, its requirements are:

When a fire occurs, to speed detection alarm and fire detection occurred in specific locations (specific address coding).

The investigation confirmed, can be timely informed of the fire department in fire fighting.

System itself should be its own fault detection features, such as under-voltage alarm and system self-test function to ensure the automatic alarm system in good condition.

More high anti-interference ability of the system to prevent False Alarm system.

Relatively long life cycle of the system.

**SOLUTIONS:**

The primary advantage of a home fire alarm system is increased reliability and the ability to place alarms and bells exactly where needed. However, the reason most people have them is that they wanted a burglar alarm system and the cost of adding fire alarm features to a residential burglary system is relatively small.

Another advantage is that they are the only way to obtain remote monitoring services. This becomes important in cases where family members may not be capable of escaping from a fire without assistance. For example, if you have an older or physically impaired person in your home and a fire started when no one was home to assist that person, alarms alone might not be enough to assure their safety.

Fire wireless sensor platform of hardware and software design for the entire systemdevelopment and application is essential, as the bottom of the whole system support to the miniaturization of its inevitable, highly integrated, network-based, energy-saving and intelligent direction, nearly few years, with the declining cost of computer and microprocessor to reduce the size, development and construction of intelligent wireless fire alarm system will have broad application prospects. Engineering test results fully demonstrated the technical feasibility and the effectiveness of the realization.

Fire alarm systems that provide remote monitoring services can also be used to provide medical alert services. Here a person with health problems who lives alone carries a radio transmitter that can trigger the system in case they need assistance. Signals received at the monitoring station are identified by type (fire, burglary, medical alert) so that the proper response can be made.

Finally, we can say by applying the suggested technique in Fire Alarm wireless Intelligent system that this system has advantages of; Low cost System, Addressable system, Integrated networkability, Conventional detector used” lower wiring costs”. Also it has little disadvantages of; System will be failed if the slaves’ unit network has a failure.

2) **OBJECTIVES:**

Fire is one of the major concerns when analyzing the potential risks on buildings. To face undesired situations it is common to install fire safety systems in a way to prevent fire occurrence or to protect buildings against such events. In these cases it is usual to have well designed systems as well as good installation procedures. However the problem relies after this stage where it is needed some attention to issues related to test and maintenance that are not meet. This article states this problem presenting the risk of not identifying possible hidden failures that will prevent the safety barrier of having a successfully operation when it will be needed in a real fire situation. It is also shown the importance of having a test and maintenance planning and how to establish the frequency of those activities.

**SOLUTIONS:**

As it can be understood the frequency of tests plays an important role on the building fire safety assurance. It is expected that the higher the frequency, the sooner hidden failures are revealed. Thus, the solution relies on establishing a maintenance and test planning and to assure its accomplishment. All critical items of the fire safety systems should be analyzed from the probability of failure and failure consequences point of view and must be tested and inspected to assure system’s availability and successfully operation (reliability). If assuring the accomplishment of the test and maintenance planning of fire safety systems is somehow a decision of the management structure or building and facilities managers, the establishment of the frequency for those activities is commonly the subject of discussion although some recommendations pointed out by regulators or insurance companies.

Theoretically the critical items are non-repairable and based on that their probability of failure at time “t” (or its cumulative probability of failure) assumes the same value of the instantaneous unavailability.

As reported and detailed by Sobral & Ferreira the average unavailability (Q(t)) of an item is dependent on the frequency of inspection (t) and on its failure rate (l), according to the following expression:

**3)OBJECTIVES:**

Nowadays the fire accident are happens mostly because of people's carelessness or it may be an accident. I have taken a survey about it.The most of the fire accident causing by firecrackers industry, matchbox industry or a short leakage of current in public places like school, college, mall etc… To Prevent us from the fire.this system will help us in future.It will alert us during a fire happened and also give instruction to take the steps by preventing us.

**SOLUTIONS:**

Using colour sensor and temperature sensor, this system will Detect the Fire and Alert Us.Using a Transciever and gps it will give instruction to us for what we have to do during this situation and send the Fire accident Location to Emergency services like Fire service and Ambulance. Using this instruction by the system. Surely, we will escape from the fire.And also The fire service and Ambulance will reach the Exact location by tracking the Gps. This system also send the low traffic shortcut way to Them.

**4)OBJECTIVES:**

Safety is a crucial consideration in the design of residential and commercial buildings to safeguard against the loss of life and damage to property. The existing fire alarm system on market nowadays is too complex in terms of its design and structure. Since the system is too complex, it needs regular maintenance to be carried out to make sure the system operates well. Meanwhile, when the maintenance is being done to the existing system, it could raise the cost of the system.

**SOLUTIONS:**

A Kind of electronic eye; the other's a sort of electronic nose. The eye type of detector is more properly called an optical smoke detector (or photocell smoke detector) and it works a bit like Tom Cruise in Mission Impossible. Remember the scene when Tom dangles from the ceiling trying to avoid all those light-detecting burglar beams? An optical smoke detector is just like that inside. The detector must be screwed to your ceiling because that's where smoke heads for when something starts to burn. Fire generates hot gases and because these are less dense (thinner—or weigh less per unit of volume) than ordinary air they rise upward, swirling tiny smoke particles up too. The detector is designed with a large opening in the bottom, that leads to the detection chamber up above. An invisible, infrared light beam, similar to the ones that Tom Cruise dodged, shoots across the chamber from a light-emitting diode or LED to a photocell. The photocell is an electronic light detector that generates electricity for as long as light falls on it. Normally, when there is no smoke about, the light beam shoots constantly between the LED and the detector. An electronic circuit detects that all is well and nothing happens. The alarm remains silent. But if a fire breaks out, smoke enters the chamber and interrupts the beam. Because no light is falling on the photocell, it does not generate an electric current anymore. The circuit spots this straight away realizes something's amiss and triggers the shrill and nasty alarm that wakes you up and saves your life.