DESIGN AND IMPLEMENTATION OF MONITORING AND TRACKING SYSTEM IN FOREST

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ABSTRACT

Every citizen's responsibility is to protect and preserve the forest and animals living in it. But still now, there were no system to maintaining it in a proper manner, because of this smuggling of trees, forest fire were happened. Animal monitoring is done by electric fence technique, by this animals can easily affected. To overcome these drawbacks, we have to implement a monitoring and tracking system in our project, this will reduce the unnecessary death of animals and to control the smuggling of trees and also detect the forest fire**.**

INTRODUCTION

Forest is the protectors of earth's ecological balance. Unfortunately the forest fire is usually only observed when it has already spread over a large area, making its control and stoppage arduous and even impossible at times. Millions of hectares of forest are destroyed by fire every year. The objective is to detect the fire as fast as possible and its exact localization and early notification to the fire units is vital. Nowadays there are numerous occurrences about pirating of trees like sandal, red wood and so forth. These trees are expensive and pitiful. Sneaking of sandal wood has made financial and peace issues in territories. The fundamental goal of this undertaking is to build up a frame work which can be utilized to confine sneaking of trees. Survival and development of wild life sustains the balance and stability of the entire eco system. Wildlife monitoring can provide a wealth of information such as wildlife species, quantity, habits. This method provides a basis for effective protection.

EXISTING SYSTEM

In this existing system they have used electric fence had been used to control the unwanted entry of wild animals from the forest. By using of electric fence it may cause death to the wild animals and it is not possible to monitor all the remote places. In forest fire it will not be detected before it happens. It causes irreparable damage to the ecological system. And in the smuggling of trees and it may cause deforestation. In forest, fire loss of habitat for animals. Increase particles in the air can affect health of people. Soil damage which can result in the soil erosion Uncontrolled burns can result in millions of dollars worth of property damage to homes or timber**.**

PROPOSED SYSTEM

Early detection of forest fires is the primary way of minimizing their damages. A novel approach for forest fire detection using image processing technique is proposed. Fire detection system based on infrared cameras**.**
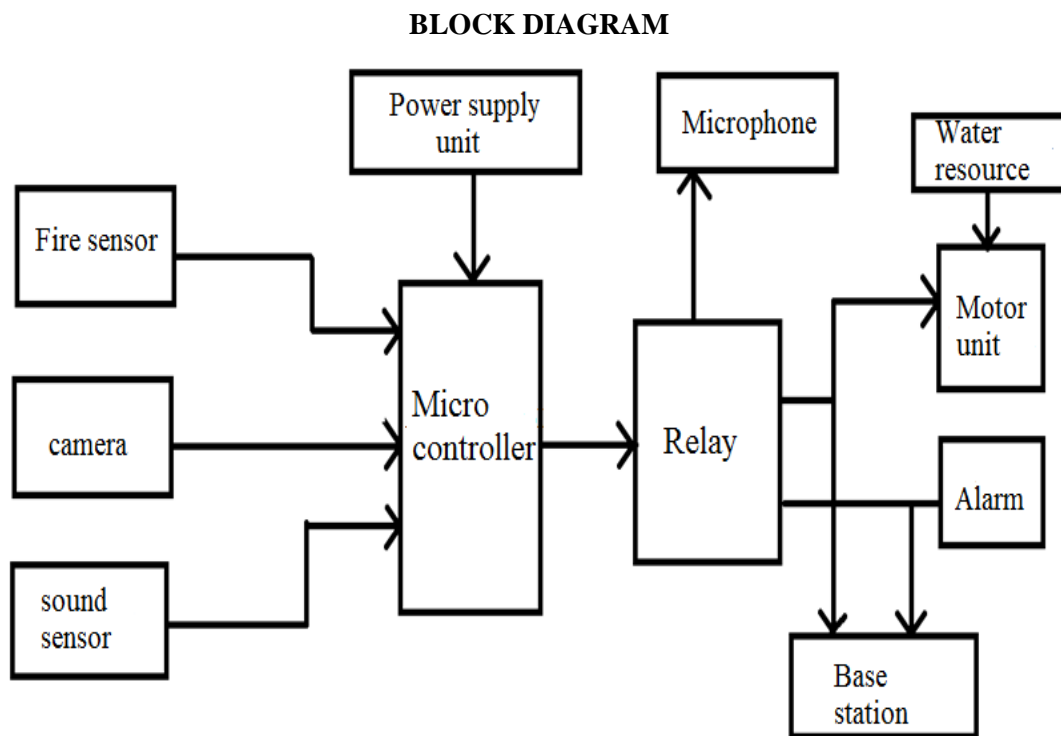
BLOCK DIAGRAM

FIGURE 1: BLOCK DIAGRAM FOR MONITORING AND TRACKING SYSTEM

MATERIALS AND METHODS

Fire sensor- A fire detector works by detecting smoke and heat. These devices respond to the presence of smoke or extremely high temperature that is present with the fire. After the device has been activated, it will send a signal to the alarm system to perform the programmed response for that zone.

Sound Sensor- the Sound Sensor has a thin piece of material called a diaphragm that vibrates when hit by sound waves. The vibration of the diaphragm is converted by the sensor into an electrical signal that is sent to the LEGO brick, which knows that a sound has been heard.

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Micro controller- Node MCU IOT module it has operating voltage of 2.5V -3.6V. It has inbuilt Wi-Fi modem, it is single combined device that translates internet data packet via the modem and sense it through wirelessly to devices in your home via the router. Wi-Fi routers can connect two LANS or WANS.

Micro Phone
The device that converts sound waves into analogous electrical waves. Usually called a "mic" or "mike", it contains a flexible diaphragm composed of film or foil that vibrates as it makes contact with the sound.

Relay
A relay is an electrically operated switch. It consists of a set of input terminals for a single or multiple control signals, and a set of operating contact terminals. The switch may have any number of contacts in multiple contact forms, such as make contacts, break contacts or combinations thereof .It has three pins

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namely normally open, normally closed and then common. It act as an magnet only the current is passed on the relay. It is used to transfer the information to the forest into base station**.**

Alarm

If a fire is detected or any abnormalities in the environment the alarm will produce the alert signal to the base station.

Motor unit- A pump motor is a dc motor device that fluids. A DC motor converts direct current electrical power into mechanical power. Pumps operate by some mechanism (typically reciprocating or rotary) and consume energy to perform Mechanical work by moving the fluid**.**

In the proposed system the sensor is used to detect the temperature rise in the environment. If the temperature rise is detected then the information is send to the base station through the micro controller. In this microcontroller is in build with Wi-Fi module for the transmission of data to the base station via wireless sensor Network .If the fire is detected then the controller will switch on the pumping system through relay. And then for poaching of trees in forest, we have to use sound sensor for detecting the cutting of trees in the forest. If the sound is detected then it will give alert signal to the base station through the controller and relay unit. Nowadays, animal monitoring is very essential because the unwanted entry of wild animals from the forest area into a rural area affect the farmer lands, crops and people also, for that we have to implement monitoring and tracking of animals by using the infra red thermal cameras which have been capture the image of the animals and send it to a base station, based on the animals the microphone will produce the irritating sound and return the animals in to the forest.

Installation process is not complex. By avoiding poaching trees the soil erosion can be control. In animal monitoring system low power is needed.

Moderate the temperature and regulate rain fall. Forest play an important role in the global, ecological, environmental and recreational system
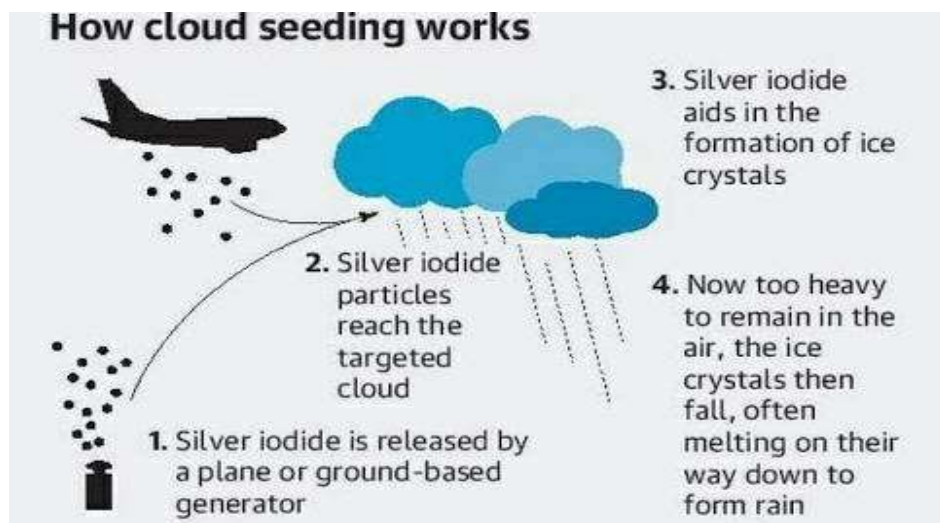
FIGURE 1.3: MODEL FOR PROPOSED SYSTEM

FIGURE 1.4: IMPLEMENTATION OF CLOUD   SEEDING

FUTURE ENHANCEMENT
We can produced an irritating sound through the audio to return the forest. This information is received by the forest inspectors via computer. The abnormalities of animal measure and migration of animals also has   been recorder. It is very useful for forest officer**.**

CONCLUSION
In our project is mainly focusing about the prevention about of wild animals from the available system. Hence the forest department can easily monitor the forest areas around the rural places. This is achievable through the use of sensors and camera. Low possibility of the false alarms. Provide some information about the fire behavior for the fighters to helping team work organizing. Helps in decision making by distinguish between peaceful fire, fault alarms and reaction and this undertaking presence a microcontroller sound sensor sneaking adding to the insurance of vital and expensive trees. Reproduction and trial result have been contrasted with approve the proposed structure**.**

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