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A SECURE BOMB DIFFUSAL SPY ROBOT CONTROLLED USING ANDROID APP

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ABSTRACT: *This system presents the wireless bomb disposal robot which will help to improve the defense of our nation from terrorist, suicide bombers and other such activities. The bomb detectors and disposal system work only with the presence of experts. But this way of analyzing takes more time and makes the risk to the life of experts. The Wireless Bomb Disposal Robot uses the control application, at the user end to control the robot remotely using Wireless technology. The bomb technician controls the robot using this application at the control site. The Robot consists of a Base, a Robotic Arm, RPI, and a camera on it. We have used DC motors for the moving robot and the gripper of the robotic arm. As we are not risking the life of a bomb expert or any other commando. Hence introducing the safest way for disposing of the explosive to save the life of common people. So with the help of the IOT technology DEFENSE system also can get an advance defense device in the form of the BOMB deposing ROBOT. As we know disposing of the bomb is a big task for human beings there is always the fear of loss or life in case any mistake's done by the human that's why robotics technology can give solutions this problem.*

KEYWORDS: *Robot, Arm, Camera, Metal Detector, Controller, GPS.*

I. INTRODUCTION

Now a days IOT technology taking granted for most of the controlling applications like medical, defense, automobile, industrial project, smart cities and many more. It has been considered as another technological revolution. The Internet of Things also called the Industrial the Internet has been defined as a global infrastructure for the information society, enabling advanced services by interconnecting (physical and virtual) things based on existing and evolving interoperable information and communication technologies. A High number of applications and controller can get connected to the IOT network, and with the help of the robot, we can dispose of a bomb. Now the question arises here how we can control the robot? There are lots of technology to control robot these are wireless or wired again they get divided into some technology in wireless like:

1) Robot control 2) Controller 3) Wi-Fi 4) Camera Live Stream and much more but all this technology have some and advantages and some limitations too so rather than the use of this all we can go with IOT (internet of things) a new trend of communication and controlling this has a lots advantages during controlling

Motivation

- The Hardware model consists of an arm that cuts the required wire to defuse the bomb.
- Modern techniques used in defense are the bomb disposal robot.
- A metal detector is an analog electronic instrument that detects the presence of a metal object.

II. PROBLEM STATEMENT

In dangerous situations, robots can replace humans by detonating a bomb or moving the device to a safer location where it can be detonated. This keeps people away from the bomb, but the bomb is still detonated. In addition to all of the problems of saving evidence this strategy also introduces different difficulties. The robot must be controlled remotely, making it difficult for the controller to see everything that is happening.

III. PROPOSED SYSTEM

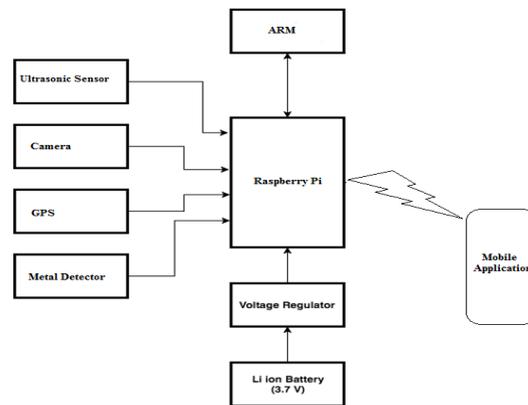


Fig.1 Proposed block diagram

A. Raspberry Pi:-

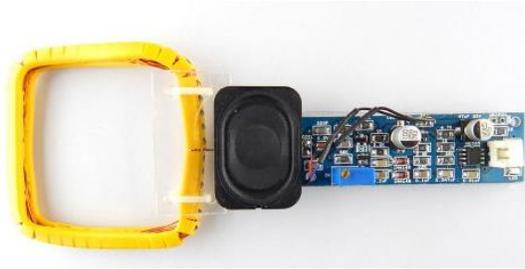
Raspbian OS is especially available for Raspberry Pi, Raspbian comes out on top as being the most user-friendly, best-looking, has the best range of default software and optimized for the Raspberry Pi hardware. Raspbian is a free operating system based on Debian (LINUX).



B. Metal Detector:-

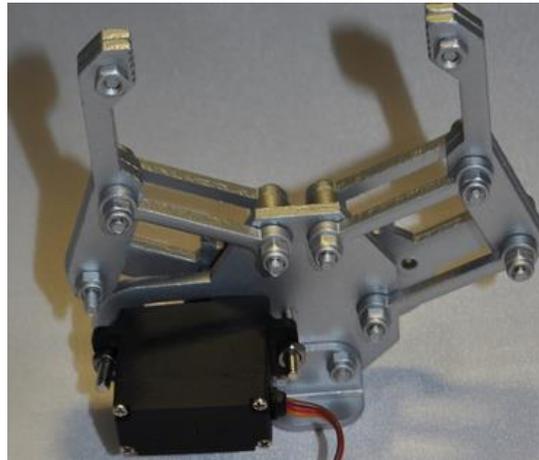
The metal detector sensor working is when the electromagnetic field is transmitted from the search coil into the front side of robot Metals in the electromagnetic field will become strengthened & reflect an electromagnetic wave of their own. The metal detector

comprises a search coil that receives the retransmitted electromagnetic wave & sends signals to the controller of the presence of metal.



C. Arm Controller:-

The arm controller is mounting to the robot for cutting the wire for bomb defuses; the cutter is attached to the arm for cutting the wire of the bomb.



D. Object Detection:-

The Third feature is the object detection robot if the robot is going to the bomb defuse then sometimes obstacles are detected using an ultrasonic sensor, so we check the obstacles and detect if an object is identified the front of the robot.



E. Camera:-

A webcam is a video camera that feeds or streams its image in real time to our computer through a computer network. When captured by the computer, the video stream may be viewed using the mobile application for analysis of the bomb structure closely.



F. GPS:-

The Global Positioning System is a space-based satellite navigation system. GPS provides location and time of the object in information in all weather conditions. It is a network of 30 satellites orbiting the earth at an altitude of 20,000km whenever you are on the planet. The GPS (Global Positioning System) receiver continuously receives the latitude and longitude values for every position of the object or system.



Applications:

We have designed it as an assistant robot to the bomb disposal squad but there are several other applications of this robot. It can be used by:

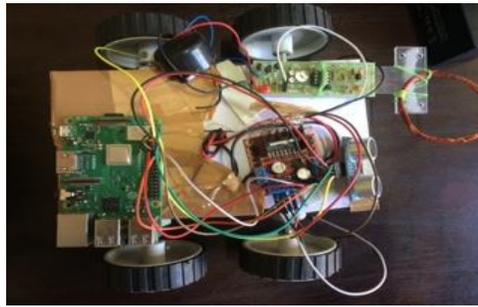
- Police: In hostage situations
- Military: For reconnaissance missions
- Fire: To provide video feedback of the site for analysis
- Nuclear: For handling hazardous or radioactive materials

IV. RESULT

Existing and proposed comparison:

The Disadvantages of an existing project are a robot that can be controlled by hand gestures and by an RF remote. This project is much useful for mines detection, surveillance applications. In this project, the RF module is used so that the range is very small, and hand gesture did not provide the accuracy rather than sensors.

To construct a basic bomb diffusing robot which can handle simple tasks like cutting wires, metal detector, live streaming, location tracking, object detection, etc. and a simple autonomous robot to help in the transit of the bomb.it Also gives video feedback to us so effective handling of the robot can be possible.



(a)



(b)

Hardware setup (a,b)

V. CONCLUSION

The proposed system of the bomb-diffusion robot will be very useful in the area of security and spying of enemies as well as the areas where human beings cannot reach the robot will do that bomb-diffusion work this robot is also remotely operated through the internet so there is no harm to human lives. Here is a basic mechanical robot, IOT technology and interfacing of raspberry pi and metal detector module and connectivity all together can form the best bomb- diffusion device which would be very helpful to save human life using the internet.

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