



Military Spying Robot

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ABSTRACT:

The military spying robot Has helped the Army, the fire workers and the police officer in the critical situations but when it comes to efficiency many of existing system have less accuracy and less technology. Our goal is to make most efficient robot in order to Technology and also accuracy. For manual support we are installing Robotic arms with metal detector. The wireless bomb disposal robot which will help to improve 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 make risk to life of experts. The Wireless Bomb Disposal Robot uses a control application, at the user end to control the robot via android application using Wireless technology. The whole system is controlled via android application. The bomb technician controls the robot using this application at control site. Input from the user is transmitted over to the Receiver, where it is received, identified and given to the appropriate module (Robot) to act.

Introduction:

In this project bomb disposal missions provide arm or designers, disposal technicians and mission controllers with a number of challenges including high risks in it. A typical bomb disposal mission will initially involve investigating the site using a remote-controlled robot and if possible, disarming the bomb remotely. Sometimes it is necessary for a human which is bomb disposal expert to disarm the device. For this purpose, the expert who exposes the bomb will put on a protective suit and helmet, pickup a tool box of equipment ,and walk the 100 or so meters to the site .

To reach the bomb's location ,it may be necessary to climb stairs ,crawl through passage way or even lie down to fulfil the mission. The system also includes night vision camera which will not only allow viewing whatever will be recorded in day time but also during night. The whole system is controlled via android application. Robotic arm and camera are placed in such way that it has a minimal ground clearance and a camera at top for continuous surveillance. Metal detector sensor detects the ground metals by creating magnetic field through its coil. The use of raspberry pi in such robot is another up-gradation in the field of robotics.

An outstanding up gradation in the robotics industry is the internet-controlled robot. The microprocessors and ultrasonic sensor which will receive commands sends by the android application. The system sends commands to the receiving circuit mounted on the vehicle through android application. The android application involves commands like forward, backward, right and left direction to control the robotic arm and also controlling buttons for camera. Thus, this application involves both Robotic arm and Robotic vehicle so that the system can not only be used to enter a high-risk area but also to pick, move and place whichever objects it wants to. Each and every movement of the vehicle will be recorded and can be viewed in a PC wirelessly. Commands to the receiving circuit mounted on the vehicle through android application. The android application involves commands like forward, backward, right and left direction to control the robotic arm. Thus, this application involves both Robotic armandRobotic vehicle so that the system can not only be used to enter a high-risk area but also to pick, move and place whichever objects it wantsto.

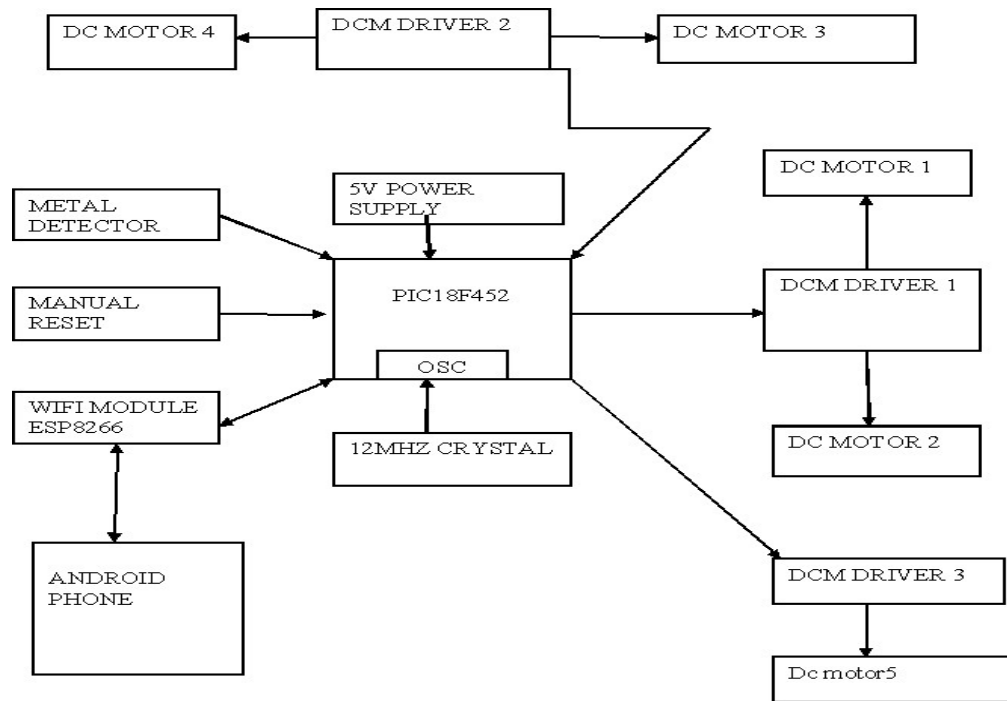
Working Principle:

It captures images and transmits these images through the transmitter in the form of digital signals, which are received by the receiver unit connected to the mobile or computer.

We can design a simple prototype of a war field spying robot that can be controlled remotely and the images transmitted by the camera can be monitored and analyzed on a mobile.

It consists of four DC motors as actuators that provide reverse and forward motion to the robot

Block Diagram:



Ultrasonic Sensor

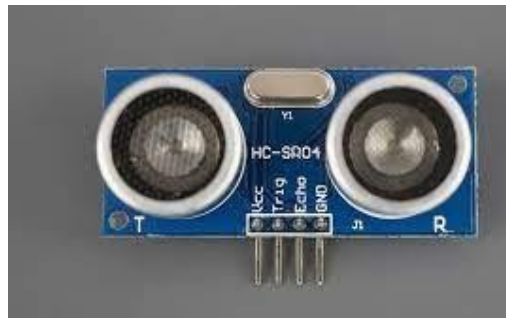


Figure: ultrasonic sensor

Used to avoid and detect obstacles with robots like biped robot, obstacle avoider robot, path finding robot etc. Used to measure the distance within a wide range of 2cm to 400cm Can be used to map the objects surrounding the sensor by rotating it Depth of certain places like wells, pits etc. can be measured since the waves can penetrate through water.

Wi-Fi Module ESP8266:



The ESP8266 Wi-Fi Module is a self-contained SOC with integrated TCP/IP protocol stack that can give any microcontroller access to your Wi-Fi network. The ESP8266 is capable of either hosting an application or offloading all Wi-Fi networking functions from another application processor. Each ESP8266 module comes pre-programmed with an AT command set firmware, meaning, you can simply hook this up to your Arduino device and get about as much Wi-Fi-ability as a Wi-Fi Shield offers (and that's just out of the box)! The ESP8266 module is an extremely cost-effective board with a huge, and ever growing, community

Night Vision Camera



The project is designed to develop a robotic vehicle using android application for remote operation attached with wireless camera for monitoring purpose. The robot along with camera can wirelessly transmit real time video with night vision capabilities.

RaspberryPi



Figure : Raspberry Pi

It offers ground-breaking increases in processor speed, multimedia performance, memory, and connectivity compared to the prior generation Raspberry Pi 3 Model B+, while retaining backwards compatibility and similar power consumption.

Metal Detector sensor



Figure : metal detector coil

A metal detector is an instrument that detects the presence of metal nearby. Metal detectors are useful for finding metal inclusions hidden within objects, or metal objects buried underground. They often consist of a handheld unit with a sensor probe which can be swept over the ground or other objects.

CONCLUSIONS:

We built a robot for spying purpose based on night vision camera to capture the night activities at the war field or any outside field where human being cannot go. 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- disposing device which would be very helpful to save human life using the internet. The controlling is done using Raspberry Pi microcontroller. The video capturing is done by night vision camera and transmitted to the smart phone where a user or a person can monitor the field of war. 5.

FUTURE SCOPE:

The technology can be improved further by giving commands to receiving circuit and control it by using satellites communication. It will be used in malls for pickup, drop trolleys and automotive car painting.

REFERENCES:

1. Chaitrali Jadhav, Shamli gibile, Snehal Gaikwad, Neelam Dave, "military spying and bomb disposal robot using IOT". International research journal of engineering and technology ISSN (e): 2250-3021, ISSN (p): 2278-8719 PP 09-11-2018.
2. <https://www.engpaper.com/spying-robot.htm>
3. <https://nevonprojects.com/android-military-spying-bomb-disposal-robot/>
4. <https://www.youtube.com/watch?v=A>