



BOMB DETECTING AND DEFUSING ROBOT

GOKULANATHAN.L¹, PRINCE ROZARIO.J², SURYA.B³, ROSHAN.N⁴, SANJALN⁵

1 ASSISTANT PROFESSOR 2,3,4,5 UG STUDENT

MECHANICAL ENGINEERING

SONA COLLEGE OF TECHNOLOGY, SALEM, TAMILNADU

ABSTRACT

Nowadays bomb disposal and diffusing has become a very critical and hazardous method to human's life, In order to overcome the problem a concept based on wireless bomb disposal robot is proposed. The bomb is disposed using the robot which will be controlled through the wireless control module. The control module consist of a transmitter and the actual Robot consists of the receiver module .The receiver module is interfaced with an ARDUINO UNO R3 board. The Robot functions according to the input given via the transmitter. The control module contains LCD display which is interfaced with a wireless video receiver which receives video signal from the wireless camera. The wireless camera is to be placed in the robot near the arm which houses the center shaft motors used for the actual diffusion purpose so that the video captured can be viewed in the LCD display which is placed in the control module. We have used DC motors for movement of the robotic arm. As we is not risking the life of a bomb squad expert or any other solder or commando hence introducing the safest way for disposing the explosive to save life of common people.

Keywords: Smart Phone, Bluetooth device & Robotic arm

1.INTRODUCTION

In today's modern environment, almost everybody uses smart phones, which are a part of their day-today life. This project was about robotic movement control through smart phones. Many researchers have developed such robotic movement control system using smart phones. Here, we aim to make a robot and to connect the metal detector circuit to it. Here, a dedicated application has been created to control robotic hardware, which controls the movement of the robot. The embedded hardware has been developed on ATmega328P microcontroller and controlled by an Android smart phone. This controller receives the commands from the Android phone, takes the data and controls the motors of the robot by the motor driver relay. The robot can able to move forward, backward, left and right movements. The Smartphone is been interfaced to the device by using Bluetooth. A Bluetooth device HC-05 module was used with Arduino UNO to receive commands from the smart phone. A bomb detector circuit was connected to the robot to detect the bomb. A beep sound was made when it detected the bomb.

2. LITERATURE SURVEY

S. Keerthana, AR. Vellaiyan proposed by detecting the metal and verified with wireless camera whether it is a hazards object. If so, robotic arm disposes the bomb safely. This project is simulated by using proteus. Anisha cotta, Rajat Desai proposed to improve the defense and safety to the military and bomb squad. The bomb technician controls the robot at control site Bluetooth module is used to transmit and receives the data from the site to control unit and control unit to the site. DC motors for the elbow and the gripper of the robotic arm. Chaitrali Jadhav, Shamli Gibile [3] proposed an android application to control whole system. The commands from android application are received by wifi device and microcontroller. Android application also involves in commands for robotic arm. Night vision camera is used to record accurate data from the site. Saurabh Mahowadiwar, Priti pai proposed serial communication

with robot using Bluetooth technology. Bluetooth is connected to robot and commands are given through android application. Abhilash.V, PK. Mani provided that wheeled robot get controls from the bomb squad experts using mobile phone. When the suspicious material is identified with the help of metal detector sensor that material is verified by experts through camera. The gained data send to data centre through wifi module. To identify the bomb nature like temperature and other features additional sensors like temperature and gas sensor are attached. If the bomb is detected with the help of gripper picking, placing and cutting functions can be done. The commands for the arm and robotic vehicle received from android application. The android application involves commands like forward, backward, right and left to control the robotic arm. The data are gained in data can be view through things peak. At the point when the dubious material is related to the assistance of metal finder sensor. That material is checked by specialists through camera. The acquired information ship off server farm through Wi-Fi module. To recognize the bomb nature like temperature and different highlights extra sensors like temperature and gas sensor are joined. On the off chance that the bomb is identified with the assistance of gripper picking, setting and cutting capacities should be possible. The orders for the arm and automated vehicle got from android application. The android application includes orders like forward, in reverse, both ways to control the mechanical arm. The information is acquired in Android application is used to control robotic arm. Blynk application is used.

3. DESIGN OF EQUIPMENT AND DRAWING

The bomb detecting robot consists of the following components to full fill the requirements of complete operation of the machine.

Control unit

- Bluetooth
- Battery
- Dc motor
- Bomb sensor
- Smart phone
- Robot model

4. BLOCK DIAGRAM

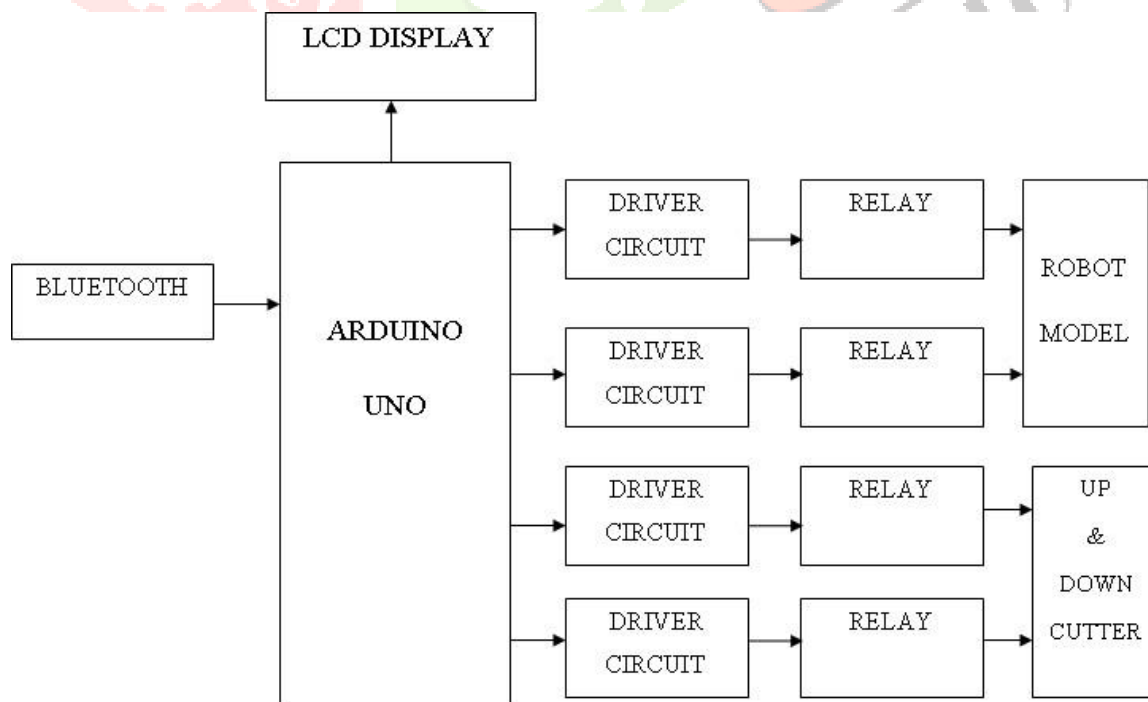
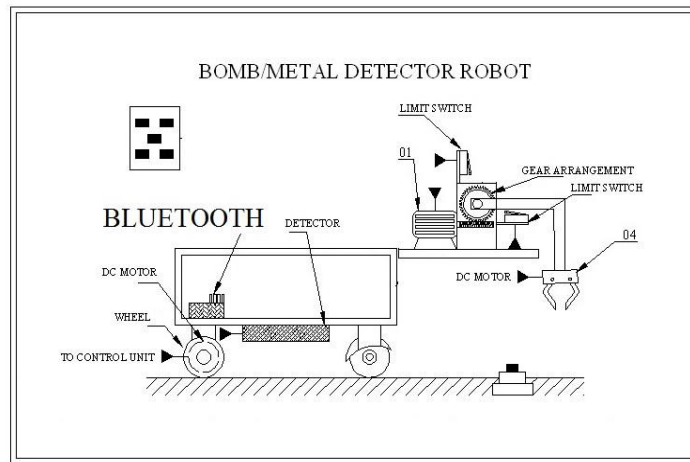


Fig: 1 DRAWING FOR BOMB DETECTING ROBOT



5. WORKING PRINCIPLE

Bomb detector just acts as a metal detector to detect any metal in the required areas. Since the bombs are made up of metals. The bomb detector is attached in the bottom side of the robot with an antenna. Robot movements are controlled through Bluetooth communication using smart phone. The robot model installed in microcontroller, robot with bomb detecting sensor, and removing mechanism. The smart phone side to android app devolved for robot direction control signals through the Bluetooth via into original signal then given to micro controller. Here the micro controller is flash type reprogrammable micro controller. It receives the signal from decoder and activates corresponding driver circuit. Driver circuit controls the motor, by which the robot movement is controlled. If any objects related to metal or, bomb is detected the mechanism finds that one and gives the signal to micro controller. Now the micro controller activates the alarm driver circuits. So, the alarm makes sound for indication. Then up and down hand motor mechanism activates in find the bomb and wire stripper mechanism motor activate in bomb deactivated for successfully.

6. CONCLUSION

Accordingly proposed system manages the cost of openness to plan of straightforward robots which help military applications. Manual control is applied to distantly control the robot from control room. At whatever point signal cautions by distinguishing a metal, a remote camera fixed in robot is used to check whether it is a dangerous object. In the event that so the robotic arm is physically controlled to incapacitate the bomb securely and the attributes of bomb and other information are put away in cloud for future reference. By utilizing this innovation, we can recognize the bomb as right on time as could really be expected and being destroy it effectively with the goal that we can without much of a stretch save the existence of human. In this way planned robot could supplant bomb disposal crew in military and police.

7. REFERENCE

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