METAL DETECTOR ROBOTIC VEHICLE OPERATED BY ANDROID APPLICATION

ABSTRACT

The project is designed to develop a robotic vehicle that can sense metals ahead of it on its path similar to sensing land mines. The robot is controlled by a remote android application. Remote operation is achieved by any smart-phone/Tablet etc., with Android OS, upon a GUI (Graphical User Interface) based touch screen operation. It consists of a metal detector circuit interfaced to the control unit that alarms the user behind it about a suspected land mine ahead. An 8051 series of microcontroller is used for the desired operation.

At the transmitting end using android application, commands are sent to the receiver to control the movement of the robot either to move forward, backward and left or right etc. At the receiving end two motors are interfaced to the microcontroller where they are used for the movement of the vehicle. The android application device transmitter acts as a remote control. While the receiver end Bluetooth device is fed to the microcontroller to drive DC motors via motor driver IC for necessary work. A metal detector circuit is mounted on the robot body and its operation is carried out automatically on sensing any metal underneath. As soon as the robot senses this metal it generates an alarm sound. This is to alert the operator of a possible metal (eg: land mine) ahead on its path.

Further the project can be enhanced by mounting a wireless camera on the robot so that the operator can control the movement of the robot remotely by watching it on a screen.
**BLOCK DIAGRAM:**

**6V Battery**

**HARDWARE REQUIREMENTS:**
- 8051 series Microcontroller
- LED
- Crystal
- Resistors
- Capacitors
- Diodes
- Voltage Regulators
- Metal Detector
- DC Motors
- Motor Driver
- Push Button
- Bluetooth Device

**SOFTWARE REQUIREMENTS:**
- Keil compiler
  - Language: Embedded C or Assembly
  - Android Application

**MOTOR DRIVER**

**METAL DETECTOR**

**9V Battery**