

Multipurpose Military Spying Robot

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Abstract - This system is developed in order to reduce the number of human victims in terrorist attack like 26/11. This problem can be overcome by designing a spy robot which involves wireless camera in order to examine rivals easily when it is required. These robots can secretly enter into the enemy's area and send us the information through wireless camera. For over half a century robotics has been a key for advanced manufacturing. For military and law enforcement purposes, these systems are being utilized on a large scale as robots and their peripheral equipment's have become more sophisticated, reliable and miniaturized. In military matters such as dealing with potential explosives, mobile robotic plays a very important role. Mobile robots are operated remotely for spying and sending back video images to the operator and this is possible with suitable sensors and cameras to perform different mission. Now-a-days the most popular gadget are android smart phones. So with the help of android phones robots can be operated.

Key Words: Metal detector sensor, Bluetooth module HC05, Android phone, Smoke sensor, GPS, Ultrasonic sensor

1. INTRODUCTION

In this system mine disposal technicians and mission controllers with a number of challenges including high risks in it. For viewing and recording in day time and also during night, night vision camera is used in this system. Through android application, the whole system is controlled. An Android smart phone will act as remote controlled device for movement of the robot. The Bluetooth module will act as an interface between Smartphone and arduino. We will be using Bluetooth module for the system, which can be used as either master or slave. The robot movement will be decided by the controller. In addition to this we also have a ultrasonic sensor and also a metal detector to detect bombs. Through android application, the receiving circuit that are mounted on the vehicle receives commands. The android application involves commands like forward, backward, right and left direction to control the robotic arm. Thus in this system both robotic arm and robotic vehicle are involved so that the system can be used to enter a high risk area and also be used to throw, move, pick and place any objects. Through wireless PC's, minute detail movements of the vehicle will be viewed and can be recorded. For controlling the operation of the robot advanced controller can be used. In practical fields this kind of robot is used widely. This system can be helpful in wars as a part of spying. By employing different types of

sensors the robots can be further be improved to have more decision taking capabilities.

1.1 Working Principle

1.1.1 Metal Detector sensor

For detecting big size metallic objects these metal detectors can be used. It is also used for coil sensing. For detection the coil should be kept near metallic object. A weak R.F range oscillator is used as an input circuit. Parts of tuned oscillator are formed from Sensing coil. Magnetic energy is absorbed when coil is brought near a metallic object and oscillator does not work. Then the final transistor operates and buzzer is activated.

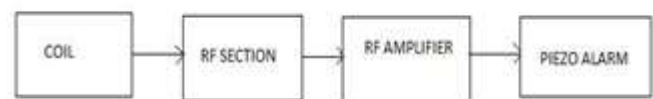


Fig -1: Metal detector sensor

1.1.2 Bluetooth Module HC-05

The bluetooth module HC-05 consists of six pins. The six pins Key, 5V, GND, Tx, Rx, Status. The bluetooth module has two devices master device and slave device.

As follows the connection between the devices takes place: Tx of one pin is connected to Rx pin of the arduino board while the Rx pin of bluetooth module is connected to the Tx of arduino. Thus, for the operation of bluetooth module, cross-connection is required.

The master device must be connected to the slave for proper communication to take place.

1.1.3 Commands through Android phones

Using TCP/IP link android phone will be connected to the server. Once it connects to the server, it can issue commands to move the robotic vehicle in forward, backward, left and right direction by using Bluetooth serial application.

2. BLOCK DIAGRAM

The block diagram of this system is as given below:

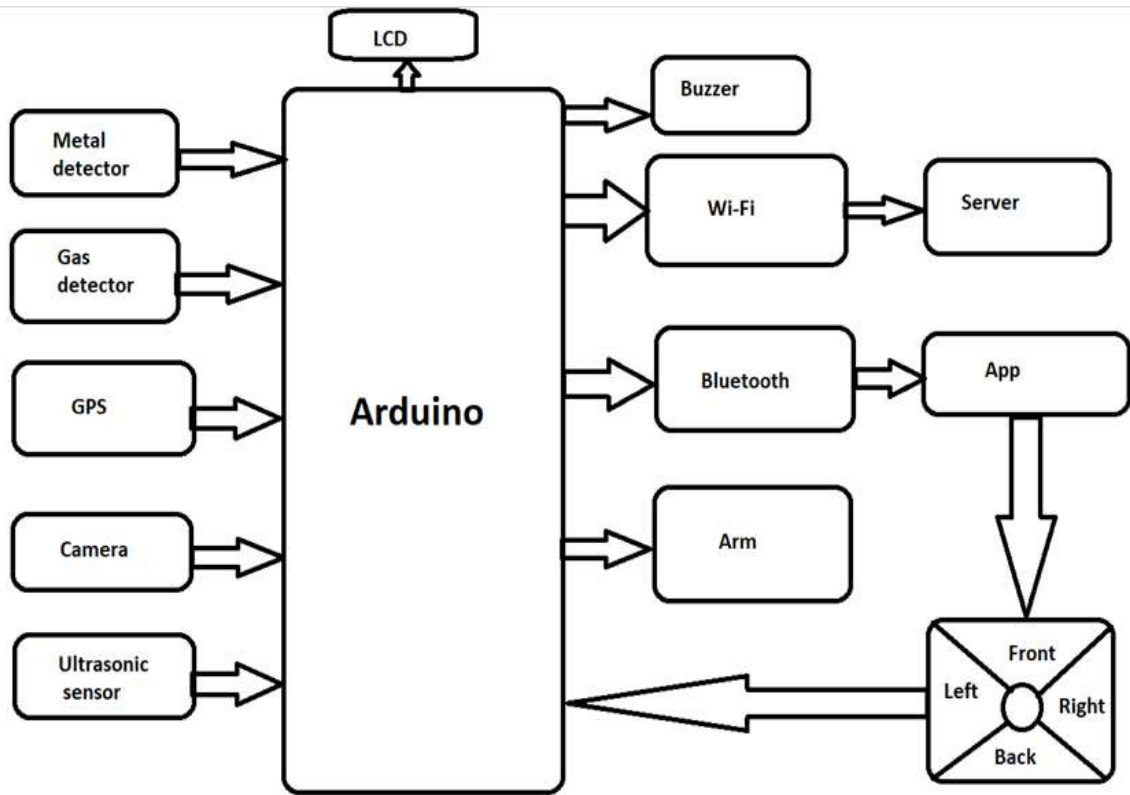


Fig -2: Block diagram of the system

3. FLOWCHART

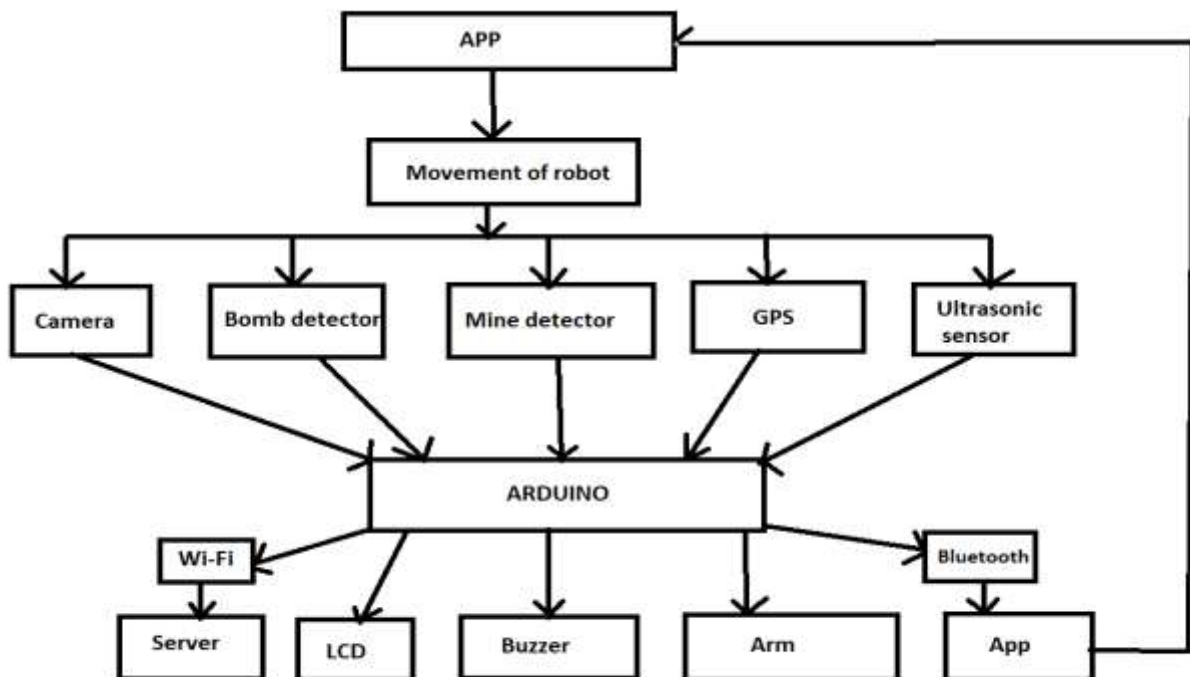


Fig -3: Flowchart of the system

4. RESULT

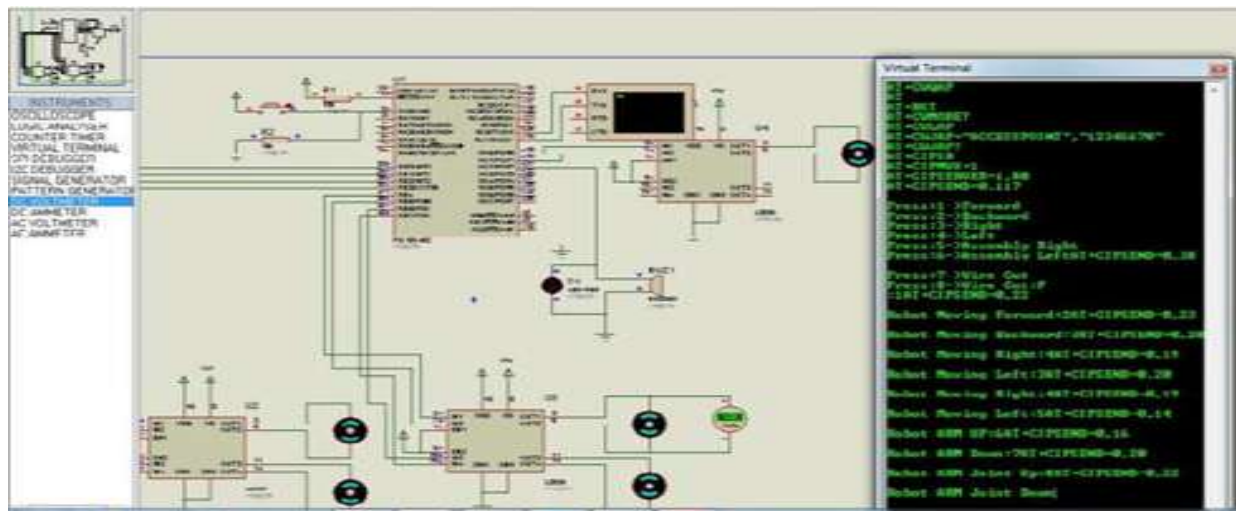


Fig -4: Results using software

4. CONCLUSION

An android device that can develop effective remote control program is a smart phone. In this program bluetooth connection is used to communicate with robot. A communication which is a two-way communication between the Android phone and the robot has proven to be meaningful. To fulfill the needs of the military, the police and armed forces, the multi-purpose military Spying Robot is designed. It can be used in different environments and scenarios and has countless applications. For instance, at one place it can be used by the armed forces, military purposes, while at another instance it can be used for spy purposes. It can also be used to diffuse the mines after detecting it.

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 use for search & rescue type operations and in bomb defusing .It will also be used for animal tracking in forest. This robot will be used in the borders for disposing hidden land mines. The robot will be used for surveillance or reconnaissance.

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