MANTECH Publications
International Journal of Research in Electrical, Electronics and Communication Engineering
Volume 5, Issue 1, January-June, 2020

Advanced War Robot

Anirudh Manaria[1], Kamal Pandey[2], Aasheesh Kumar[3], Dr. Farooq Husain[4]
U.G Scholar[3], HOD[4]
Department of Computer Science and Engineering
MIT Moradabad, India
Corresponding authors' email id *anirudh.manaria31@gmail.com[1], pandeykamal22011998@gmail.com[2], aasheeshkumar2015@gmail.com[3], farooqhusain100@gmail.com[4]*

Abstract

To enable the successful deployment of task-achieving advanced war robot systems the interactions must be coordinated among the robots within the MTS and between the robots and the task environment. There have been a number of impressive experimentally demonstrated coordinated MTS; however, most have been designed through ad hoc procedures, typically providing task-special, empirical insights with few contributions toward greatly needed general-purpose, principled design methods. Modern military forces are using different kinds of robots for different applications ranging from mine detection to rescue operations. In order to make robots efficient for the unpredicted cluttered environment of the battlefield, research on different aspects of robots are under examination in laboratories to be able to do its job autonomously, as efficiently as a human operated machine can do.

Keywords: *Wireless, robot, RF technology, Transmission, Reception, War, Spy, Surveillance*

I. INTRODUCTION

The study of advanced war robot (AWR) has received increased attention since the World War II. This is not surprising as continually improving technology and infrastructure have made the deployment of AWR consisting of increasingly larger numbers of robots possible. With the

growing interest in AWR comes the expectation that, at least in some important respects, multiple robots will be superior to a single robot in achieving a given task. To date, the design of AWR has remained ad hoc and, as such, few formal methodologies have been devised.

Military robots are autonomous robots or remote-controlled mobile robots designed for military applications, from transport to search & rescue and attack. This project uses in the war field for multipurpose such as for detecting humans and land mines and to transmit audio and video information, this project is also useful to destroy the target. This robot is completely automatic. They are actually controlled by human beings. The robots are unmanned machines as they are termed can be any moving object or a flying aero plane fitted with all necessary equipment's like sensors, cameras etc. The use of robots in warfare. Also traditionally a topic for science fiction is being researched as a possible future means of fighting wars. Already several military robots have been developed by various armies. The use of autonomous fighters and bombers to destroy enemy targets without human pilots. However the largest draw back to robotics is their inability to accommodate for non-standard conditions. Advanced in artificial intelligence in the near future may help to rectify this.

II. BLOCK DIAGRAMs

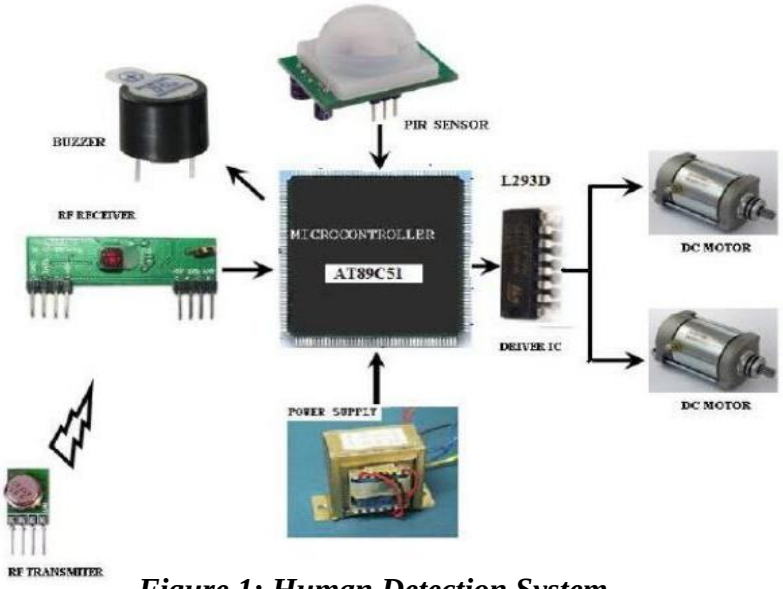

Figure 1: Human Detection System

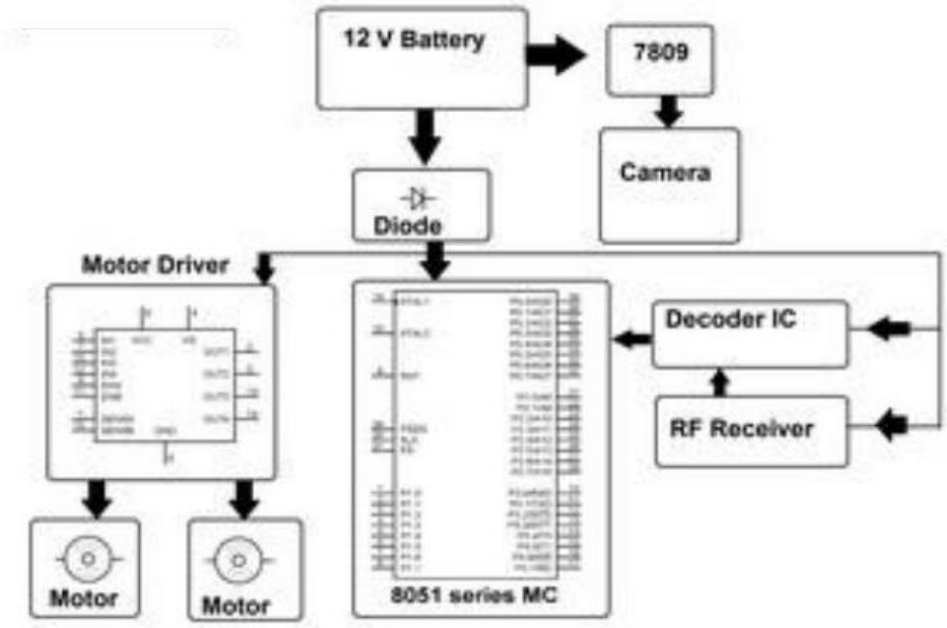

Figure 2: Audio and Video transmission system

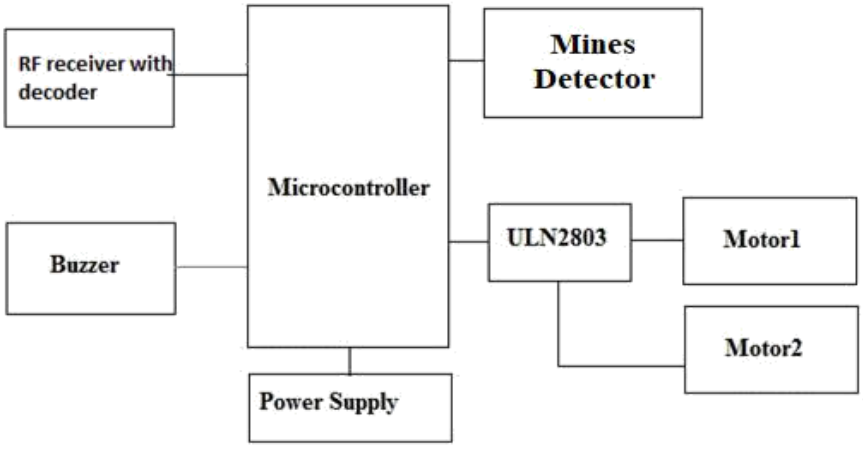

Figure 3: Mines Detection System

- Human Detection is used to detect the humans in the war field and also capable to transmit the video and audio information.

- land mines detector is used to detect the land mines when land mines is detected the robot stops there and buzzer starts ringing.

- In missile launcher system, the position of missile (means launching angle) is first set and then missile is fired so as it will hit the target. The angle can be set from 0o to 350o in step of 10o. A micro stepping stepper motor is used to set missile angle.

III.COMPONENTS OF ADVANCED WAR ROBOT

A. PIR Sensor

PIR sensor detects a human being moving around within approximately 10m from the sensor. This is an average value, as the actual detection range is between 5m and 12m.PIR are fundamentally made of a pyro electric sensor, which can detect levels of infrared radiation. For numerous essential projects or items that need to discover when an individual has left or entered the area. PIR sensors are incredible, they are flat control and minimal effort, have a wide lens range, and are simple to interface with.

Figure 4: PIR sensor

Application of PIR sensor

- All outdoor Lights
- Lift Lobby
- Multi Apartment Complexes
- Common staircases
- For Basement or Covered Parking Area
- Shopping Mall
- For garden lights

B. Wireless camera

Wireless camera is cameras that transmit a video and audio signal to a wireless receiver through a radio band. Many wireless security camera require at least one cable or wire for power; "wireless" refers to the transmission of video/audio. However, some

wireless security cameras are battery-powered, making the cameras truly wireless from top to bottom. The sensor outputs the moving image to a dashboard display. Increasingly, that's coupled with sophisticated algorithms that detect humans and large animals and most recently that sound an alert. This is the case for all wireless camera.

Figure 5: Wireless Camera

Applications of Wireless Camera

- Military
- Law enforcement
- Hunting
- Wildlife observation
- Surveillance
- Security
- Navigation

C. Ultrasonic Sensor

An Ultrasonic sensor is a device that can measure the distance to an object by using sound waves. It measures distance by sending out a sound wave at a specific frequency and listening for that sound wave to bounce back. By recording the elapsed time between the sound wave being generated and the sound wave bouncing back, it is possible to calculate the distance between the sonar sensor and the object.

Figure 6: Ultrasonic sensor

D. ATMEGA328 microcontroller

It's a high performance 8-bit AVR RISC microcontroller. It consists of a 32KB ISP flash memory, and it also consists of a read while write capability.

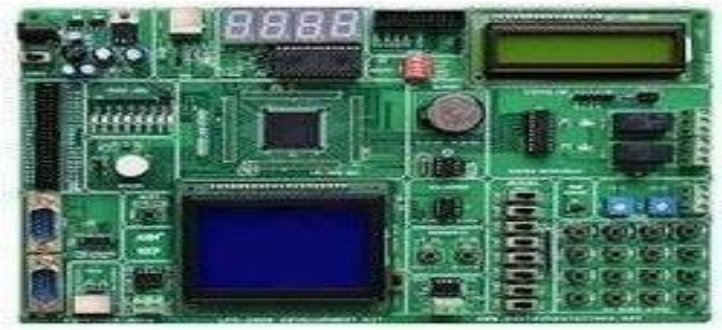

Figure 7: ATMEGA328 microcontroller

E. DC Motor

DC motor is an electric motor which converts the electrical energy into mechanical energy.

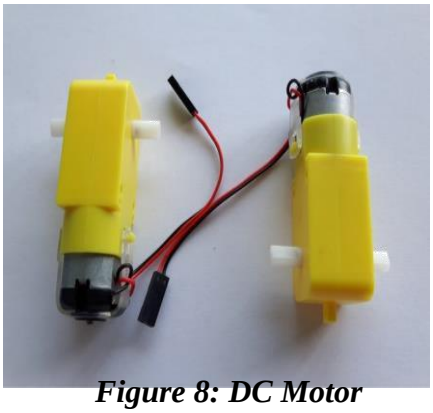

Figure 8: DC Motor

F. Servo Motor

A servomotor is a rotary actuator or linear actuator that allows for precise control of angular or linear position, velocity and acceleration. It consists of a suitable motor coupled to a sensor for position feedback.

Figure 9: Servo Motor

G. Gas Sensor (MQ6)

They are used in gas leakage detecting equipment's in family and industry, are suitable for detecting ofLPG, iso-butane, propane, LNG, avoid the noise of alcohol and cooking fumes and cigarette smoke.

Fig 10: Gas sensor(MQ6)

CONCLUSION

In this paper, We presented the design and implementation of a Advanced war field robot, detect human and land mines and to transmit audio and video transmission as well as to destroy the target. The robot will move depending on the motor direction based upon the input we give through transmitter (remote) section. RF signals are used as control signals. By using these signals encoding is done & signal is sent through the transmitter At the receiver end, these decoded signal are given as input to drive the motor. The robot is used for short distance surveillance thus ensuring the security of the region. This helps the forces to view the things accurately that are currently happening in the surrounding area and to plan ahead accordingly.

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