

War Field Spy Robot

Pushendra Singh¹ Waqas Naeem² Praveen Datt Pathak³ Raja Shubham⁴ Satyam Gupta⁵
^{1,2,3,4,5}IMS Engineering College, Ghaziabad (U.P), India

Abstract— In order to aid our military forces and help them execute any military operation we have designed an unmanned ground vehicle called WSR (Warfield spy robot). The robot is equipped with various operational features to augment the security provisions. Modern military forces are using different kinds of robots for different applications ranging from mine detection to rescue operations. In future, they will be used for reconnaissance and surveillance, logistics and support, communications infrastructure, forward-deployed offensive operations, and as tactical decoys to conceal maneuver by manned assets. 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. Latest technologies, software and hardware are being investigated to have advanced and intelligent robots for different operations on the war field. This paper presents robotic technologies being used in war spying. These robots are under examination for autonomous, co-operative and controlled environment.

Key words: Transmission, Reception, PR Sensor, Detection, Stealth Mode, Live feed

I. INTRODUCTION

As the various terrorist attack and ceasefire violations are on rise, it becomes crucial for our Indian army to retaliate such types of threats to our nation and take proper actions to provide the security. We have often heard from news that Pakistani forces have time and again violated ceasefire. In the previous year itself there were a total of 720 ceasefire violations along the LOC by the Pakistani forces. Such type of ceasefire violations sometime causes a huge loss of our soldier life and while responding to such types of violations it becomes risky to take proper actions.

Along with such attacks by the alien forces there were numerous terrorist operation in which our soldiers showed their valour and sacrificed their life. A soldier's life is a vital resource for our Indian armed force and it is the duty of every armed forces to save their life and provide them with better resources as well as alternatives to make the operation feasible.

One of such alternative could be the use of a robot or any reliable source which may provide our soldiers enhanced security and help them execute the operation in a much easy way. Even US military make use of such robots to guide their soldiers during any operation by providing them substantial information about the operation site. The robots equipped various arms and ammunitions also take proper retaliatory actions in time of necessity.

Robotics have been a staple of advanced manufacturing for over half a century. As robots and their peripheral equipment become more sophisticated, reliable and miniaturized, these systems are increasingly being utilized for military and law enforcement purposes. Military and battlefield applications continue to grow at an accelerated

pace due to demand fueled by government investment. Over the past decade, we have seen increasing levels of investment in autonomous vehicles used for surveillance and security. Instead of having people get close to hazards such as unattended objects or car bombs, robots are used. If an operator concludes a dangerous object might explode, the robot could neutralize that object by shooting to detonate it. The ability to operate over challenging terrain and the ability to autonomously navigate in unstructured environments are areas of focus, Power management and new generation drive-train systems utilize advanced materials and highly efficient transmissions to obtain higher speed, accuracy as well as durability to work in a wide range of environments. The quality of images must be good because those images are the only way the operator knows what the robot does. The operator does not have the robot in a line of sight but could be a mile away.

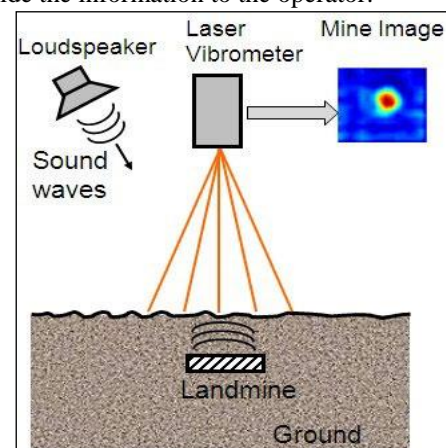
Therefore, it becomes a dire necessity of our armed forces to make use of modern technologies develop the robots. As a citizen of India we took the initiative to contribute our part in our nation and decided to develop a military robot. So, our Warfield spy robot can prove to be a useful aid to our military soldiers after equipping it with various operational features.

II. FEATURES INCLUDED

- 1) Land mine detection
- 2) Rotating Wireless Night vision camera (to provide livefeed)
- 3) Mounted laser gun(to take retaliatory actions)
- 4) Camouflage coated body
- 5) Wireless controller

A. Landmine Detection

As landmines are weight sensitive so, we have kept the weight of our robot as minimum as possible to detection them and provide the information to the operator.



B. Wireless Night Vision Camera

It assists our soldiers to get the clear view of surrounding in dark places and detect the unidentified persons in its vicinity. The whole path that the robot traverse is being seen by the

wireless night vision camera that is placed on robot and accordingly the video signals are sent by the camera for the direction it traversed.



C. Mounted Laser Gun

Laser gun is used to take the proper retaliatory actions before our armed forces repond to them.

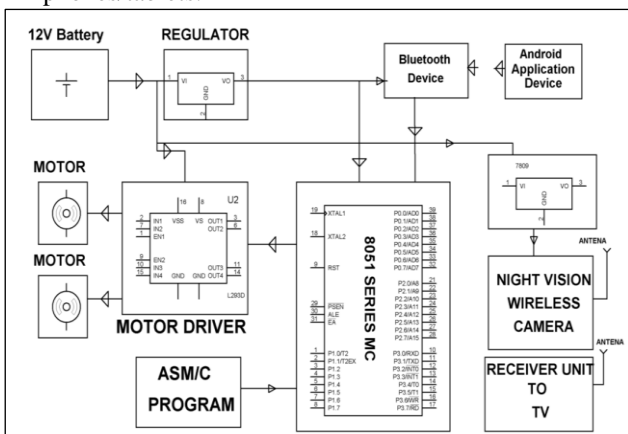
D. Camouflage Coating

We have coated our robot with camouflage coating which makes it difficult for terrorists base camps to detect it. A camouflage coating to the case of our robot may enhance its capability in taking the instant actions to kill the terrorists. Thereby, the robot will be loaded with a wireless controlled bomb and the robot will be self-destructed after invading into the terrorists base camp. Above are the some of the listed features of our warfield spy robot.

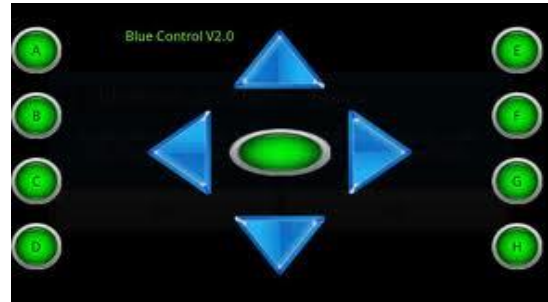
III. BLOCK DIAGRAM

All the major components of the robot will be connected to the central cpu i.e, 8051 microcontroller. We have used a Bluetooth device for the wireless media propagation. Due to certain advantages like

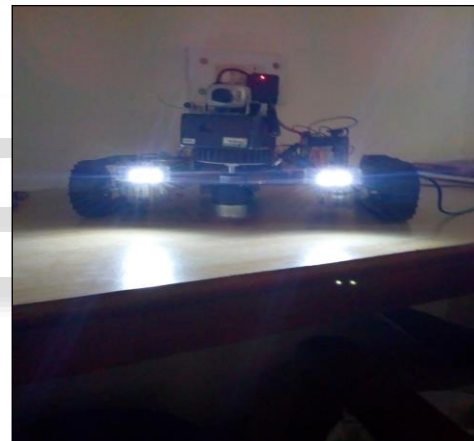
- Super simple and easy way to interface using Bluetooth stack.
- 3.3V Device with standard 5V DC Power source.
- Can also support SPI Protocol, pins are made available.
- Low power consumption, Low cost.
- Has high-performance wireless transceiver system
- Can be used to interface with PC, Mac or Android phones/tablets.



A. Controller UI



B. Prototype



IV. RESULTS/DISCUSSIONS

Our project is incorporated with the following applications:

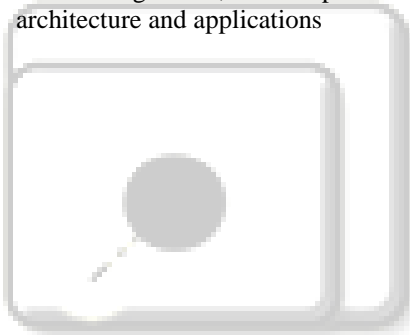
- 1) It can be used in various military operations like surgical strikes etc.
- 2) For surveying the alien fields
- 3) Performing sophisticated tasks in places where a soldier can't crawl into
- 4) In terrorists operations (ex: taj hotel terrorist attack)
- 5) Retaliating to ceasefire violations
- 6) Providing border security
- 7) Destroying terrorists base camps
- 8) Aid our soldiers.

V. CONCLUSION

Versatility and reliability of our project proves the various applications as well as its ability to compete with the modern technology. Hence, it's an efficient deal to make to our military advance and proves our worth.

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