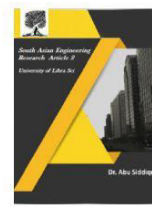# NIGHT VISION WIRELESS WAR FIELD SPYING ROBOT

[1]DR.K.RAKESH, [2]B.KUSUMA SREE, [3]D.JANANI, [4]G.ANJALI

[1]Assistant Professor, Department of Electronics and Communication Engineering, Malla Reddy Engineering College For WomeN, Maisammaguda, Dhulapally Kompally, Medchal Rd, M, Secunderabad, Telangana.

[2,3,4]Student, Department of Electronics and Communication Engineering,Malla Reddy Engineering College For Women, Maisammaguda, Dhulapally Kompally, Medchal Rd, M, Secunderabad, Telangana.

ABSTRACT

The primary goal of developing this robot is to enhance surveillance in conflict zones or rescue operations, reducing risks to human life.Equipped with a night vision wireless camera, the robot can transmit real-time from the field, aiding in the prevention of attacks and minimizing casualties. It provides military personnel with critical information about unfamiliar areas, improving safety and reducing the risk of loss.Additionally, the root is useful in rescue operations for monitoring dangerous conditions.A key feature of this project is it controllability via an android app, allowing for easy operation from a mobile device.

I.INTRODUCTION

With the aim of developing a high-tech technology that serves high speed technology, advanced capacity to control the robots and to device new methods of control theory. The realize above standards some technical improvement along with the need of high performance robot is required to create a faster, reliable, accurate and more intelligent robot which can be devised by advanced control algorithm, robot control devices and new drivers. Earlier the robots were controlled through wired networks but now to make robot more users friendly, they are framed to make user commanded work. Therefore to attain the requirements we can use android as a multimedia to control the user friendly robot. The design of our project encourages developing a robotic vehicle based on RF technology for the remote operation connected with the wireless monitoring purpose. The robot is camera mounted on the robot for mounted on the robot for embedded with 8051 series microcontroller for desired operation and is generally used for spying purposes. The transmitting module consist of the push buttons that send the commands to the receiving module for
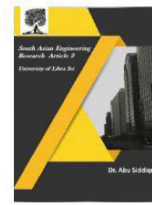
controlling the movement of robot either to right, left, forward, downward. In the receiving module of the robot two motors are interfaced with the 8051 series of microcontroller to control its movement via motor driver IC. The remote control (RF transmitter) has a range of 200m that transmits the signals to the RF receiver. The receiver collects and decodes the received signals before feeding it to the microcontroller to drive the DC motors via motor drivers. The wireless camera used for spying purpose also serves in complete darkness using IR lightning. The distinct applications of this concept in such robot can be a smart phone controlled robots where the movement of the robot is controlled by a robot on the basis of android platform. Smart phone transmits the AT commands and data to the 8051 controller and controls the motor by motor driver L923D. The robot motions left, right, forward, backward. Interfacing is being done between device and Bluetooth. Bluetooth device HC-05 module receives the commands from smart phone.

II.LITERATURE SURVEY

Selvam, M. "Smart phone based robotic control forsurveillance applications."Dept. of ECE, Karpagam University, Coimbatore,Tamil Nadu, International Journal of Research in Engineering and Technology (2014).

The robotics and automation industry which is ruled the sectors from manufacturing to household entertainments. It is widely used because of its simplicity and ability to modify to meet changes of needs. The project is designed to develop a robotic vehicle using android application for remote operation attached with wireless camera for monitoring purpose. The robot along with camera can wirelessly transmit real time video with night vision capabilities. This is kind of robot can be helpful for spying purpose in war fields.

The advent of new high-speed technology and the growing computer Capacity provided realistic opportunity for new robot controls and realization of new methods of control theory. This technical improvement together with the need for high performance robots created faster, more accurate and more intelligent robots using new robots control devices, new drivers and advanced control algorithms. This project describes a new economical solution of robot control systems .In general; the robots are controlled through wired network.
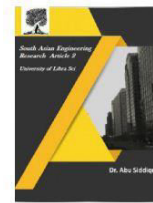
The programming of the robot takes time if there is any change in the project the reprogramming has to be done. Thus they are not user friendly and worked along with the user preferences. To make a robot user-friendly and to get the multimedia tone in the control of the robot, they are designed to make user commanded work. The modern technology has to be implemented to do this. For implementing the modern technology it should be known by all the users to make use of it. To reach and to full-fill all these needs we are using android mobile as a multimedia, user friendly device to control the robot. This idea is the motivation for this project and the main theme of the project.

In this modern environment everybody uses smart phones which are a part of their day-to-day life. They use all their daily uses like newspaper reading, daily updates, social networking, and all the apps like home automation control, vehicle security, human body anatomy, health maintenance, etc has been designed in the form of applications which can be easily installed in their hand held smart phones. This project approached a robotic movement control trough the smart phones.

Hence a dedicated application is created to control an embedded robotic hardware. The application controls the movement of the robot. The embedded hardware is developed on 8051 microcontroller and to be controlled by a Smartphone on the basis of Android platform. 8051 controller is to receive the AT commands from the Smartphone and takes the data and controls the motors of the robot by the motor driver L293D. The robot can able to move forward, reverse, left and right movements. The Smartphone is been interfaced to the device by using Bluetooth. A Bluetooth device HC-05 module is going to be added to 8051 microcontroller to receive commands from smart phone. A wireless camera is mounted on the robot body for spying purpose even in complete darkness by using infrared lighting.

Jenifer, T. Maria, et al. "Mobile Robot Temperature Monitoring System Controlled by Android Application via Bluetooth." International Journal on Advanced Computer Theory and Engineering (IJACTE) 2.3 (2013).

The project is designed to develop a robotic vehicle using android application for remote operation attached with wireless camera for monitoring purpose. The robot along with camera can wirelessly transmit real time video. This kind of robot can be helpful for spying
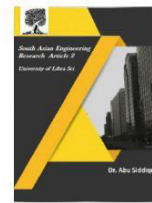
purpose in war fields. It has a feature of detecting landmines, detecting the harmful gases and a gun which is used to shoot the enemies. Microcontroller like Arduino is used for the desired operation.At the transmitting end using android application device, commands are sent to the receiver to control 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. Remote operation is achieved by any smart- phone/Tablet etc., with Android OS, upon a GUI (Graphical User Interface) based touch screen operation. The android application device transmitter acts as a remote control that has the advantage of adequate range, while the receiver end Bluetooth device fed to the microcontroller drives DC motors via motor driver IC for necessary work. An Embedded system is a combination of software and hardware to perform a dedicated task. Some of the main devices used in embedded products are Microprocessors and Microcontrollers. Microprocessors are commonly referred to as general purpose processors as they simply accept the inputs, process it and give the output. In contrast, a microprocessor not only accepts data as

inputs but also manipulates it, interfaces the data with various devices, controls the data and thus data and thus finally gives the result. This new Technology popularly known as Spying robot which will create wonders in saving many lives. The main aim of spying robot is to save lives of military people without keeping their lives into risk by going directly into the enemy land. Before, we have war field robot which are only used to see the enemy land but now we are having some added feature on to it. We have a land mine detector which is used to detect the landmines which are placed inside the land. We have gas sensor which is used to detect the type of gas in the war field if the enemy people release the harmful gas. Spy robot is not only used to monitor the enemy land we can also kill the enemy by operating it from base station. The main objective behind developing this robot is for the surveillance of human activities in the war field or border regions in order to reduce infiltrations from the enemy side. The robot consists of wireless camera which can transmit videos of the war field in order to prevent any damage and loss to human life. Military people have a huge risk on their lives while entering an unknown territory. The robot will serve as an appropriate machine for the defense sector to reduce the loss of
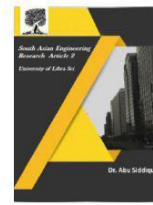
human life and will also prevent illegal activities. This robot has a feature of detecting the land mines along with detection of poisonous gas and a laser gun embedded on it. It will help all the military people and armed forces to know the condition of the territory before entering it. An embedded system is a special purpose computer system designed to perform one or a few dedicated functions, sometimes with real-time computing constraints. It is usually embedded as part of a complete device including hardware and mechanical parts. In contrast, a general purpose computer, such as a personal computer, can do many different tasks depending on programming. Embedded systems have become very important today as they control many of the common devices we use. Since the embedded system is dedicated to

specific tasks, design engineers can optimize it, reducing the size and cost of the product, or increasing the reliability and performance. Some embedded systems are mass-produced, benefiting from economies of scale. An embedded system is some combination of computer hardware and software, either fixed in capability or programmable, that is specifically designed for a particular kind of application device. Industrial machines, automobiles, medical equipment, cameras, household appliances, airplanes, vending machines, and toys (as well as the more obvious cellular phone and PDA) are among the myriad possible hosts of an embedded system. Embedded systems that are programmable are provided with a programming interface, and embedded systems programming is a specialized occupation.

Block diagram
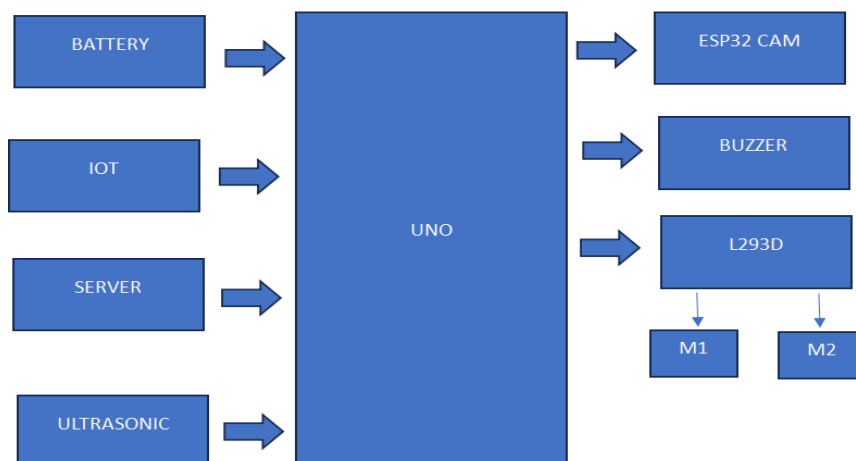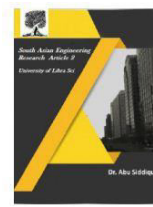
III.PROPOSED SYSTEM

The proposed system aims to develop a night vision-enabled wireless robot designed for surveillance and spying purposes in war fields. This robot will be capable of operating in low-light or no-light conditions, ensuring continuous monitoring of the war zone. The system will integrate a wireless camera with night vision capability to capture and transmit live video feed to a remote control station, allowing military personnel to monitor the battlefield from a safe distance. The robot will be equipped with multiple sensors, including infrared (IR) sensors, to navigate the environment autonomously and avoid obstacles. The wireless communication module will ensure real-time data transmission, and the robot can be controlled remotely, allowing operators to steer the robot, change its path, or adjust its camera angles as needed. In addition, the robot will feature durable and rugged construction to handle challenging war field conditions, including rough terrains, debris, and temperature fluctuations. The system's battery will be optimized for long endurance, ensuring the robot can perform prolonged missions without frequent recharging. This night vision wireless spying robot will serve as a valuable tool for military operations, enabling real-time surveillance and data collection without risking human lives. The robot's ability to operate in darkness and be controlled remotely will enhance its utility in critical, high-risk environments.

IV.CONCLUSION

We have designed and implemented the intelligence spy robot with wireless night vision camera, which operates using an android application and embedded systems.This system allows for effective monitoring of the environment and easy navigation of the robot from a remote location. By installing the receiver unit anywhere, users can maneuver the robot in all directions, optimizing the use of human resources.Currently can system relies on bluetooth, limiting its range to 50 meters.However, future improvements could include integrating Zigbee and wi-fi technologies to extend the operational range. Additional sensors could also be incorporated to enhance the system's capabilities.

V.REFERENCES

[1] Selvam, M. "Smart phone based robotic control forsurveillance applications."Dept. of ECE, Karpagam University, Coimbatore,Tamil Nadu, International Journal of Research in Engineering and Technology (2014).

[2] Jenifer, T. Maria, et al. "Mobile Robot Temperature Monitoring System Controlled by Android Application via Bluetooth." International Journal on Advanced Computer Theory and Engineering (IJACTE) 2.3 (2013).

[3] Pahuja, Ritika, and Narender Kumar. "Android Mobile Phone Controlled Bluetooth Robot Using 8051 Microcontroller." Electronics & Communication Engineering, Department, BRCM College of Engineering & Technology, Bahal, India, International Journal of Scientific Engineering and Research (IJSER) www. ijser. in ISSN(Online) (2014): 2347-3878.

[4] Mehta, Mr Lokesh, and Mr Pawan Sharma. "SPY Night Vision Robotwith
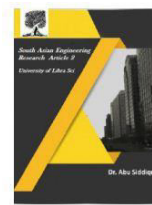
Moving Wireless Video Camera & Ultrasonic Sensor."

[5] Yeole, Aniket R., et al. "Smart Phone Controlled Robot Using ATMEGA328 Microcontroller."

[6] Borker, Kunal,Rohan Gaikwad, and Ajaysingh Rajput. "Wireless Controlled Surveillance Robot." International Journal 2.2 (2014).

[7] http://www.atmel.com

[8] http://www.aplus.com

[9] http://www.I2Cprotocols.com

[10] http://www.alldatasheets.com