"AUTOMATIC ENEMIES TRACKING AND COLOR CHANGING SPY ROBOT"

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***ABSTRACT**: Nowadays, many expenses are made in the field of defence in adopting primitive security measures to protect the borders from trespassers. These army robots are confining with sensors. Some military organizations take the assistance of automation with in the risk prone areas that don't seem to be that effective once done by army men. The paper proposed a method of constructing a spy robot which changes its colour with respect to surrounding surface Robot is solution for reducing human losses in military operations or terrorist attacks. They play major role in saving human lives. The proposed system consists of colour sensor as part of camouflaging feature, wireless camera for surveillance purpose.*

Keywords: ARM Microcontroller LPC 2148, Ultrasonic sensor, IR sensor, Color sensor and RGB LED Matrix.

1. INTRODUCTION

The word camouflage has its origin within the French word camoufler which implies 'to disguise. The only detector obtainable within the time period was the human eye. The suggests that to camouflage a military object were foliage and different regionally accessible material. The construct of camouflage is as previous as nature, it's been an integral a part of it. All animals, small and big, are found to employ several methods of concealment and disguise for self-preservation, both in defence and offence.

Practically no animal is safe, since for every animal there is a predator. There is an evolutionary arms race between different species and also within the same species. All these techniques could also be termed as camouflage and deception in nature. The basic philosophy remaining one and also the same, the changes that have return within the methodology of application and also the levels of sophistication.

Modern military technology and its future trends have been discussed at length by Friedman a1 in their book on Advanced Technology Warfare1. The information given in this chapter is based on the above reference. It is not difficult to comprehend for a layman to what levels science and technology have progressed and the impact they have

made in the various theatres of war - the land, the air and the sea. The impact of the technological explosion of the 20th century has made space another combat zone through the employment of satellites.

Developments in the field of electronics, the computer revolution, and improvements in the performance of existing materials and development of new materials satisfying critical requirements, have significantly added to the armamentarium of military hardware making the weapon platforms, weapon systems and controls more and more sophisticated and complex. This can be very well gauged, for example, from the ballistic and cruise missiles currently available. If the military hardware continues to grow in sophistication at the present rate, it would be difficult to predict the nature and magnitude of future wars. As weapon platforms and weapon systems grow in their capabilities to zero-on to the target, the availability of effective countermeasures will become a key factor for combat survivability.

The main objective of this proposed system is, to design robot which has better range and camouflaging feature to disguise the surrounding surface. DC motors are being used for the movement of robotic i.e. upward and downward movement. The robot is surrounded by relay of LED's which turns ON when a colour is detected and camouflages the robot. It detects the hardware connected

to the port. The Keil Development Tools are designed to unravel the advanced issues facing embedded software package developers µc Flash is employed to dump the code to microcontroller from computer. Computer side software called µc Flash is executed that accepts the Intel HEX format file generated from compiler. Keil development tools for the microcontroller design support each level of software package developer from the skilled applications engineer to the code for learning concerning embedded software package development. Keil to be sent to targeted microcontroller. It detects the hardware connected to the port.

2. LITERATURE SURVEY

Mrs N.S. Usha, S. Priyadarshini, K. Rohineeshree, P. Sabar devi, G. Sangeetha, "Military Re-co naissance Robot",.All the military organisations takes the assistance of military robots to hold risky jobs that can't be handled manually by troopers. In this proposal we tend to build use of robotic vehicle that helps to enter a vicinity of upper risks, more and place whenever the object wants to go. Security systems uses sensor to detect intrusion.

Priyanka Yadav, Leena Chaudhari, Swathi Gawhale, "War field spying robot with wireless night vision camera". The intention of this project is to reduce human victims in terrorist attack. Such as 26/11. So this problem can be overcome by designing the RF based spy robot which involves wireless camera, so that from this if will be easy to examine rivals when it required.
The movement of this robot is wirelessly controlled by hand held RF transmitter to send commands to the RF receiver mounted on the moving robot. Since human life is always valuable these robots are the substitution of soldier in war areas. The mechanism will quietly enter into enemy space and the data via wireless camera.

Kunj Gudhka, Aishwarya kadamand their team nowadays as there are technological advancements. These advancements are used by the military forces for reducing the risks of their casualties and to defeat their enemies. With the development of sophisticated technology, if mostly relies on the high tech weapons or machinery being used. Robotics is one of the hot fileds of modern age.

Kalyanee N. Kapdnis and her team a spy robot is made to reduce the human victims in the terrorists attacks such as 26/11. So, they said that this problem can be overcomes with the help of a "RF based spy robot which involves wireless camera".

Dr. S Bhargavi has researched an "intelligent combat robot designed specially for war field". Protection has

been provided from enemies. Whenever enemies appear in front of the robot it will fire the laser gun. This remote operation is provided by user sitting at one place. A wireless camera is mounted on the robot. A real time video is transferred to the user PC and whenever enemies are present in front of the robot then user can shoot enemy by laser gun.

Dr. M. Meenakshi presents a paper which include validation of "vision based autonomous robotic system for military application". Sum of Absolute Difference (SAD) algorithm is used.

Dr. Shantanu K. Dixit implement a paper that "control robot by remote by using internet". A real time video can be capture by using camera built on the robot. So this type robot is mainly applicable in surveillance. At the user pc, shooting video on web browser. Camera movement can easily directed in vertical and horizontal direction. The robot can be easily move anywhere by DC motor and camera can be directed at vertical and horizontal direction via stepper motor. PIR sensor is used to detect living bodies. The video is processed by RASBERRY PI. The shoot processed video is send by internet so we can control robot wherever we are. But the condition is that we have internet access. If internet access active then there is no any limitation or range of communication to the user pc with the help of internet.

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Ankita patel invents a paper on the basis of "touch screen which control multifunctional spy robot". For the seck of long distance communication zigbee network is used. This work system include microcontroller for collecting data from various places and accordingly movement of robot it can control the direction of robot. This paper consists of geared motors which include two wheels attached to it. The motor is started with the help of relay and going to control touch screen. The signal is send from touch screen to be executed by microcontroller at receiver section. It includes component like gripper, camera, video screen and sensors. The methodology of this paper is divided into two sections. Hardware and software implementation. At hardware development various component are uses such as touch screen sensor, zigbee, LCD, intelligent robot. In software implementation microcontroller is prefer. A microcontroller having ability to use large amount of memories such as RAM, ROM. also it having own ports I/O port, timer. All this embedded on a single chip. At hardware section touch screen,

tuner card, antenna, zigbee technology are used. At programming section USART communication, analog to digital convert programming and LCD character module programming are prefer. All of this programming are done in C language Programming are preferred.

Dhiraj Singh Patel "design papers that represent a robot operated by mobile". It having camera that spy every movement of enemy and control by mobile. So it is mainly applicable in military field and also preferable for police. The DTMF (Dual Tone Multi Frequency) technology is used. Because of this technology robot is control by using mobile and range of communication is unlimited. But the mobile network should be efficient. In this paper work the mobile is attached with the robot and another mobile having user trainer. The robot is completely handle or control by mobile. For processing, initially mobile user make a call to another mobile which is attached with robot.

3. PROBLEM STATEMENT

This project is introducing the robot which is used to minimize human casualties in terrorist attack such as 26/11. The spy robot has been designed to take such a cruel terror attacks. This robot is self-powered, and this robot can silently enter into enemy area. A shooting gun mechanism has been mounted on the top of the robot for shooting the enemies. This spy robot can be used in military field where there can be threat from the terrorists or intruders. As we all know, these days India is sick off massive terror attacks. Since human life is always precious, these robots are the replacement of fighters against terrorists in war areas.

4. METHODOLOGY

The spy robot can be used in military field where there can be threat from the terrorists or intruders. To avoid such disasters technological power should exceed human power .Human life and time are priceless. We have taken an initiative to design a model of spy robot that meets combat needs. So to avoid terror attacks, to ensure more security at the border and high density areas it's wise to maintain a world class military technology. The main aim of the project is to design robot which has better range and camouflaging feature to disguise the surrounding surface. Previously developed system used 8051 microcontroller, while proposed design uses ATMEGA 16 micro controller, which provide better stability and higher processing speed. It has one inbuilt ADC port to which analog output of a sensor can directly feed. This feature also helps to reduce complexity and cost of the system. All the movement of robot i.e. forward, backward, left and right is controlled with the help of microcontroller.

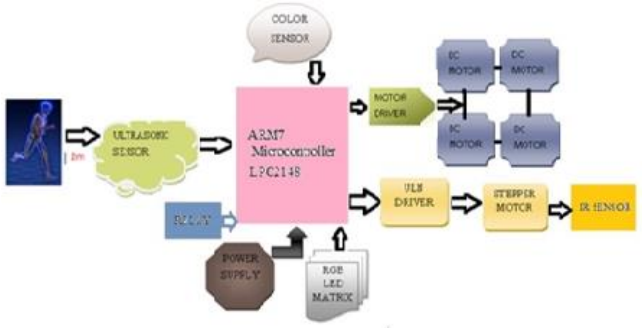

Figure: 1 Block Diagram of Proposed System

5. RESULTS

The proposed system is tested and the resulted are verified practically. The automatic enemies tracking and color changing spy robot based on military applications is verified practically. The sensor signals and object detection can transmitted through Arm microcontroller. All the sensor applications is practically verified.

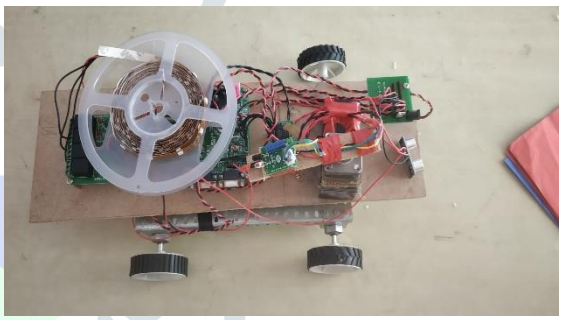

Figure: 2 Model of the system

6. CONCLUSION

The proposed system is a substitution to human life. As human life is always more prioritize this proposed robot helps to act as a security system and also a life saviour. It enacts and plays an important role of keeping eye in war field areas and captures the surroundings. As it is based on the chameleons color changing effect, the robot changes its color according to the surrounding environment and is hidden from the enemies inside. More ever, camouflaging features makes it difficult to delete the robot by naked human eye. If any obstacles is detected, robot will stop moving , and shoot out the obstacle. So, in all the proposed system provides a helping hand to our security forces in detection of intruders. The robot can also be used in high altitude areas where human cannot survive.

7. FUTURE SCOPE

Robot can be built further to work as HUMANOID. It can have many users in practical fields from teenager's robots to robots working in industries. It can be further improved in terms of decision taking capabilities by employing varied types of sensors and thus could be used in big industries for different applications.

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