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Review on Wireless Controlled Spy Robot

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Abstract

A spy robot is a combination of embedded systems to achieve the motive of surveillance, security and safety for the benefits of mankind. As the evolution of miniaturization of electronics components leads to development of electronic industry, it gives rise to the idea of creating a machine which is capable of performing tons of activities on place of human being more accurately and efficiently also consuming lesser time. One type of these machines is known as 'robot'. Spy robots have the capabilities of moving around their environment and perform the specific tasks for which it has been created or in other words programmed. It can be controlled manually as well as automatically. With the development of electronic industry the scope of robotics also rises. Many types of robots have been introduced using embedded technology to perform different tasks.

Keywords: *Robot, embedded, wireless, RF, DTMF, wireless camera, android*

INTRODUCTION

A Robot is usually an electro-mechanical machine which is guided by wireless remote or laptop. Before the invention of robot humans and animals were the only option of security. But as human being and animals have some limit of doing work, they are not able to give their 100% after some instant of time. Then, their come the role of robot, i.e., a machine which can take place of humans and animals work. According to Wikipedia "A robot is a mechanical or virtual artificial agent, usually an electromechanical machine that is guided by a computer program orelectronic circuit, and thus a type of an embedded system". Spy robots are always used as support to the existing frames. In the

early 1940's the idea of remote controlled robot has been introduced, according to which a robot can be controlled from a distance through a remote. Initially it was used by well-trained experts. So, the idea rises that one can use a robot of spying purposes instead of living things and this is when we started using robot as a spy.

LITERATURE SURVEY

According to Kalyanee N. Kapadnis 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 the help of a RF based spy robot which involves wireless camera [1].

According to Mr. Lokesh Mehta and Mr. Pawan Sharma a spy robot can also be controlled by a computer system using its keyboard. They basically said that it will be used for the transmission of audio and video signals from the destination to the source and also it can sense the darkness of its surroundings [2].

According to Wai Mo MoKhaing and Kyaw Thiha a spy robot is used to transmit video data to the intervention troop. They are made to easily move and transport. It is made up of wireless camera and antenna and wheels for movement [3].

According Kunj Gudhka, Aishwarya Kadam and their team nowadays as there are technological advancements these advancements are used by the military forces for reducing the risk of their casualties and to defeat their enemies. With the development of sophisticated technology, it mostly relies on the high tech weapons or machinery being used. Robotics is one of the hot fields of modern age in which the nations are concentrating upon for military purposes in the state of war and peace [4].

According to Dheeraj Singh Patel and his team a spy robot can be used for the security purposes to avoid attacks like 9/11. They proposed a robot which can be controlled by a cell phone using its buttons to see the live telecast of the target place by a camera attached on the robot [5].

According to Chiranjivi M. Deshpande and his team a phone can be used as a controlling device to operate external devices using android system. Android is widely used in mobile phones nowadays. So using a android system robot operation can be controlled [6].

SOME EXISTING SYSTEM

A robot can be made by using RF technology which is controlled by a remote. 8051 microcontroller is used to interface themotor for wheels movement of the robotic device. At the transmitting end using the push buttons, commands are send to the receiver and the movement of the robot is controlled, i.e., to move it in either direction like forward, backward. The RF transmitter act as a RF remote which have an adequate range of up to 200 meters. A wireless camera can also be attached to this device for the surveillance purpose. The live video telecast can be seen at the transmitting end on the PC. Some other features can also be added to the robot like color sensing, etc. [1]. Basically, a spy robot comes under the domain embedded system and Robotics. Microcontroller programming is used in embedded for operating different operations, movement of the robot is also controlled by this programming. Now, if the spy robot is made to see the happenings in the target place then an issue occurs of working of the robot in the night. Normal cameras are not able to record in the night. There are special night vision cameras for this purpose [2].

A robot can also be defined as the virtual artificial agent. It is an electro-mechanical machine which is guided by computer, mobile, or electronic programming and is able to do different tasks. Rather using a RF remote technology to control the robot another technology can be used which is more efficient, reliable and fast as compared to RF. It is DTMF, i.e., Dual Tone Multiple Frequency. It is used in the cell phones for the transmission of the signal. It is basically done by the mobile buttons and each button conveys a different meaning which is programmed in the microcontroller [5].

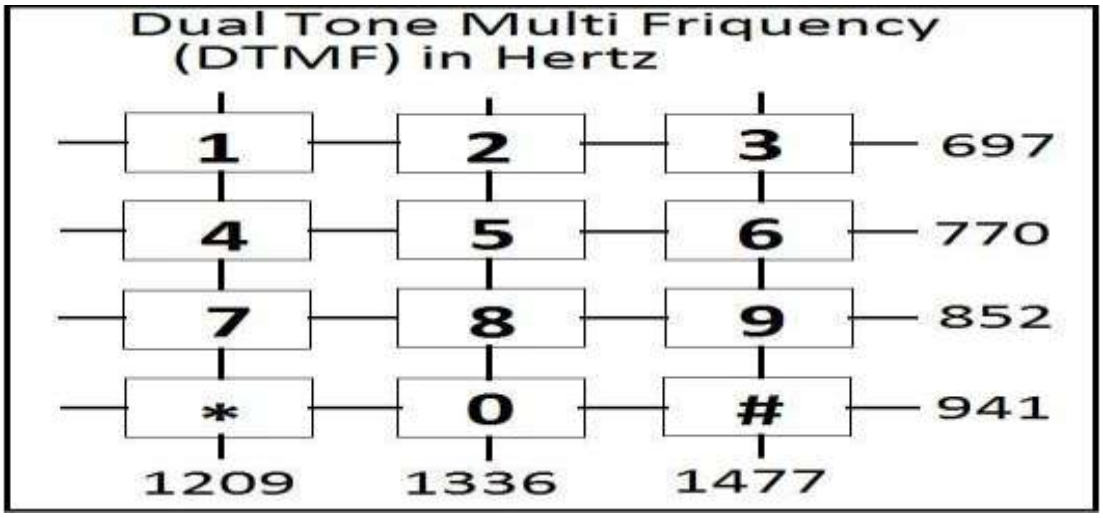

Fig. 1: *DTMF Distribution on a Dialpad.*

COMPARISON

Table 1: *Comparison between Different Research Papers.*

Research Paper under Consideration	**Merits**	**Demerits**
1.	Simple Architecture	Less Efficient
2.	Night Vision Capabilities	Small Range of Controlling due to RF
3.	Remote Controlled using RF	Limited Functioning, Small Range of Controlling
4.	Highly Sensitive	Limited Functioning
5.	Mobile Controlled using DTMF	Limited Functioning
6.	Android Controlled	Limited Functioning

CONCLUSION

We have gone through the basics of robotics and thoroughly reviewed the aspects of the existing technology and its features as well as its merits and demerits. Robotics is a wide field in which endless number of machines can be made and operated successfully. Spy robot itself is a machine created for security and surveillance purposes. Robots can be of any shape and multi-tasking. Basically, each robot is designed for some specific tasks for which it has been programmed. Today we have many spy robots like metal detector, human detector, night vision, etc. and are working successfully. Few of them have been discussed by the authors of the papers provided in here. There are many more different types of robots existing in today's world but they need some up gradation as like all the existing electronics technology need it. One of the factors that we have seen is that the power consumption and the source of power for the robots is not quite justifiable. Nowadays, the world is researching for the solar powered spy robot to increase the efficiency of the robot in terms of power consumed. Another factor that is determined is the range of the robot. Using RF the range is only up to 200 m which must be increased either using some other technology or existing one.

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