# SPY ROBOT FOR MILITARY APPLICATION USING WI-FI MODULE

[1]Aleena Johny, [2]Nikhil T Sony, [3]Dileep Augustine, [4]Hasna A E, [5]Deepa V R,

[6]Dr Gireeshan MG

***ABSTRACT--*** *In this paper, we will deliberate how to control a six wheeled robot using Wi-Fi module through an android mobile phone. A new version of wireless controlled robot is proposed for spying purpose which is mostly in military application as well as in disasters area. This robot which is a movable spy robot with wireless system. The spy robot consists of an IP camera, DC motors and servo motors for camera locations and guns. The sensors used for temperature and humidity detection and the movement of device is controlled by six movable wheels. This device powered by either regular lithium rechargeable ion batteries or solar cells.We are using smartphone camera as IP camera to capture livestreaming video surrounding the robot and that information will get appeared in user's smartphone GUI window. The camera which is fixed on the robot will take the video livestreaming and this information get sent back to user's smartphone using Wi-Fi wireless system. In this robot, we are using a gun which operates according to user's instruction through smartphone.*

***Keywords-*** *Arduino, Wi-Fi module, Sensors, IP camera, Android application, Weapons.*

## I.   INTRODUCTION

Nowadays human is replaced by robots completely in performing various continuous or repetitive and mostly dangerous activities which human not willing to do, or are unable to do because of limitation of size or about extreme environment. Spy robots have been widely used in various fields like industries, research, academic and development, militaries and so on. The spy robots are designed for spying, surveillance and inspection. This proposed system made with some special features which is beneficial mostly in military and for used in rough terrain.

## II.   PROPOSED SYSTEM

The proposed system is designed to create an android app that controls the operation of the robot. Controller can communicate with robot using Wi-Fi module which is mounted on robot. Android phones has facility of Wi-Fi, using that user can control the movement of spy robot. It uses two sensors. One is temperature sensor and other is humidity sensor. The spy robot comprises an IP camera to capture the livestreaming video surrounding the robot

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[1] *Postgraduate student, MG University, aleenajohny100@gmail.com*

[2] *Postgraduate student, MG University, nikhiltsony@gmail.com*

[3]*AssistantProffessor,Jaibharathartsand science college, MG University,  dileepmampillil@gmail.com*

[4] *Assistant Proffessor, Jaibharath arts and science college, MG University*

[5] *Asst professor,Sarabhai Institute of Science and technology*

[6] *Vice Principal, Jaibharath arts and science college*

and that information will get appeared in user's smartphone GUI window. This developed system also possess a firing mechanism to shoot the target object by checking the camera video input every time. If the controller seems anything suspicious or seen like an enemy or terrorists then the controller fire the target object or take immediate action.

**BLOCK DIAGRAM**
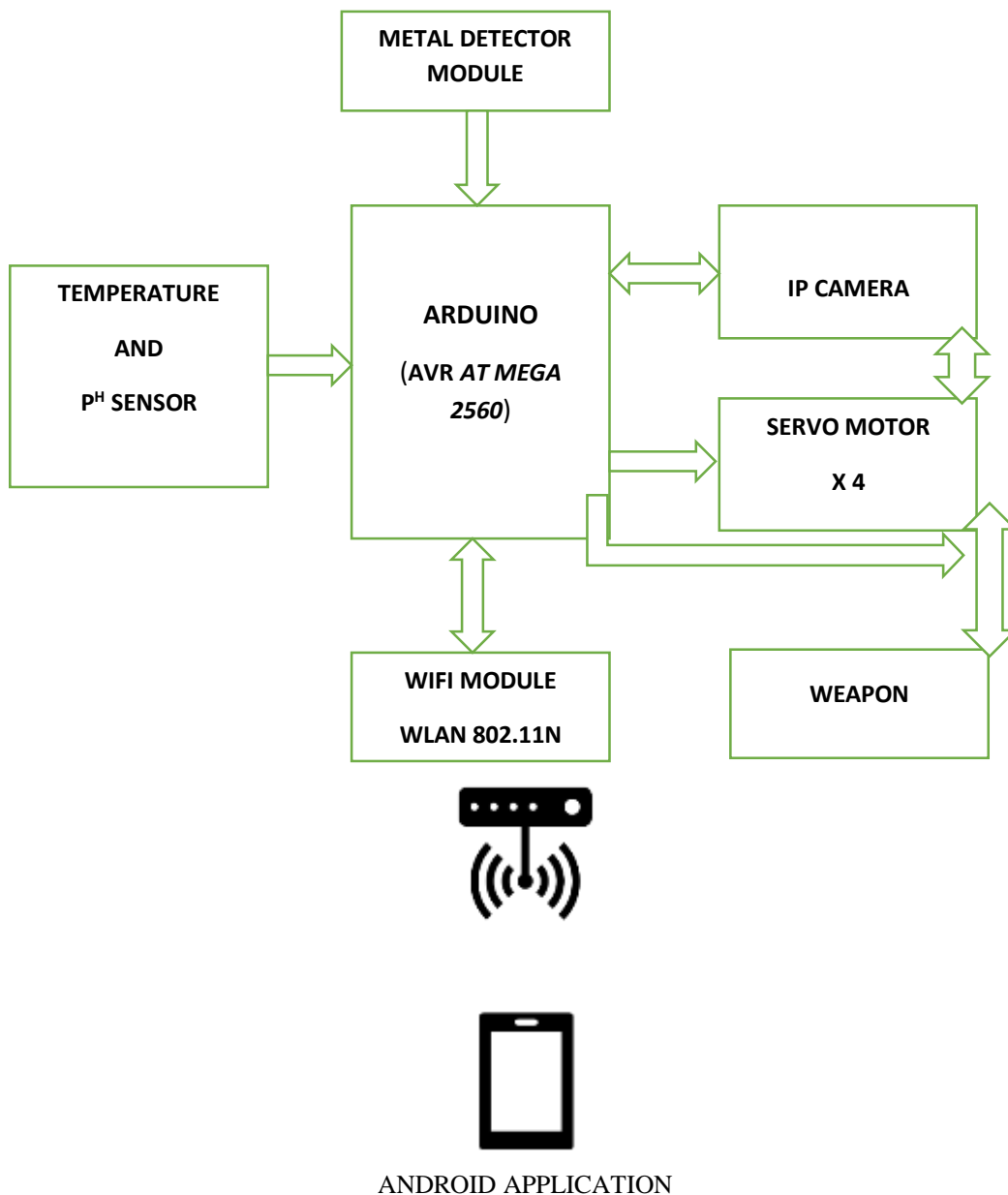


### A. *Description of block diagram*

1)IP camera: Used to capture the livestreaming video.

2) DC motors: Used to make the movements of the robot.

3)Wi-Fi module: To communicate robot with user's mobile phone.

4)Android device:

5)Arduino: Arduino is used to control overall operation of system.

6)Weapon: Used to shoot the target object.

7)Power supply: Used to provide power to the system.

### B. *Deployment Environment*

Arduino is an open source prototype. It will operate in Arduino IDE computer code that can be written and upload to the physical board. Arduino board which is a board that can be functioned via Arduino IDE by sending a set of instructions to the microcontroller unit. We are using Embedded C for Arduino programming. We build a robot in Embedded C and we are using android environment for controlling the robot.

### C. *Hardware Requirements*

1)Arduino module.

2)IP camera.

3)Wireless LAN.

4)Metal detection module.

5)Temperature sensor.

6)Humidity sensor

7)DC motor.

8)Servo motor.

9)Android application.

10)Embedded C.

11)Weapon.

12)Smart phone.

13)Power supply.

### D. *Operation of the proposed system.*

The proposed system of spy robot consists of AT mega 2560, IP camera,LCD display, 802.11 wireless LAN, metal detection module, DHT-11 temperature sensor, DHT-11 humidity sensor, DC motors, servo motors, weapon and having an android smartphone. We can create a server for controlling robot and can monitor various parameters from the android phone.

An IP camera is mounted on the spy robot to capture the livestreaming videos surrounding the robot and that information will get appeared in user's smartphone GUI window. Camera is mounted on robot for spying purpose will take video livestreaming. Video streaming over wireless network is compelling for many applications. In this research, video livestreaming was accomplished by making use of Wi-Fi from camera on spy robot to user's phone. Also,Wi-fi provide high speed connection without use of cables.

The robot will continuously monitor the temperature with the help of temperature sensor DHT-11 which is interfaced to the controller and send the parameters to the user's phone via Wi-Fi module interfaced to the

controller. The parameter readings are displayed on the user's phone. The proposed system also monitors the humidity with the help of humidity sensor interfaced to the controller. The humidity readings are displayed on the user's phone.

The metal detection module is designed for detecting weapons and bombs. This module is interfaced to the controller and monitors the status via Wi-Fi module on the user's phone. This is mostly applicable in military and disaster areas.

The spy robot possess gun firing mechanism to shoot the target object. The developed system checks the camera video input every time and if the controller seems anything suspicious or seen like an enemy or terrorist, then the controller fires the target object or take immediate action. In certain cases, compromises are needed before firing. In such situations, a warning is given by the spy robot which is recorded by the user's smartphone.

## III.    FUTURE SCOPE

- The proposed robot can be further used in industrial and military applications.
- The system can be modified with an x- rayto scan the target object.
- By increasing the range of the IP camera, we can cover a wide area.
- We can add face recognitionsystem to the IP camera thereby we can find out the wanted persons already in the crime record.

## IV.    CONCLUSION

Thuswe developed a robot which will be used for spying purpose. This proposed system will be useful at places where human cannot reach or is dangerous. The proposed robot makes movements in forward, backward, left, right, climb stairs and stop also. It reduces the human efforts and also protect the human life. It detects obstacles and avoid them. The proposed robot is mainly for spying purpose in military and in disasters area.

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