# INTERNATIONAL JOURNAL
# FOR RESEARCH

## IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

# Military Surveillance Detecting Robot

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*Abstract:  In now a days military plays major role in any country. All military organizations takes to carry risky jobs that cannot handled manually by solider. A great development in military robots in earlier times. In this proposal, we make use of robotic vehicle which helps to higher risks, security system uses sensors to detecting intrusion. If any obstacle or intruder is occur then the IR sensor is detected. By using camera will snapshot the image or frame, it will be send to the servers by using internet or sat –link, we can take the  image from the servers, if the intruder match with database of known personal data which is already stored in the officials. If  snapshot doesn't match soldiers will catch them. It also detects the landmine.*
*Keyword: raspberry pi, camera module, IR sensor, GSM.*

## I.    INTRODUCTION

As we said above Indian border military force facing a huge destruction in Pakistan, china, Nepal, Bhutan, Myanmar, Srilanka and Bangladesh. Tensions rise between nuclear neighbours after deadly raid on army base close to disputed border with Pakistan. Highly trained militants on what are essentially suicide missions– died in the three-hour assault on the base at Uri late September and seven Indian soldiers killed in attack on army base, nagrota. Police say four gunmen also killed during early morning raid on nagrota army base in Indian-occupied Kashmir, near the militarized "line of control" that divides Indian Kashmir from the Pakistan-controlled side. The pathankot attack was a terrorist attack committed on 2 January 2016 by a heavily armed team which attacked the pathankot air force station, part of the western air command of the Indian air force.The recent news is almost many soldiers were killed by Pakistani army and merely about soldiers injured, some critically. If this situation continues, then there's going to be a massive destruction in Indian border line force. Almost all the military organizations take the help of military robots to carry many risky jobs that cannot be handled manually by soldier. We have also seen a great development in military robots when compare to military robots in earlier period. At present, different military robots are used by many military organizations. This innovative system is made for operations which involve high risk for humans to enter, especially in some criminal case and may prove very beneficial for military area for spying purposes. This system makes use of robotic arm as well as robotic vehicle which helps not only to enter an area involving high risk. The whole system is controlled via android application. Thus this application involves robotic vehicle so that the system can be used to enter a high risk area, move and place whichever objects it wants to.

We the engineering students have created a border military line robot that prevents the massive destruction for human lives. This robot is used for spying enemy territories during critical situation at border line, especially monitoring the movements of enemies entering into our country without any breach. The robot is made small in size. So the robots can even send to the enemy's camp to monitor the movements.

## II.    SURVEYING OPERATION

The entire system is controlled by PC. It includes only one sections, they are

*A.    Transmitter section*
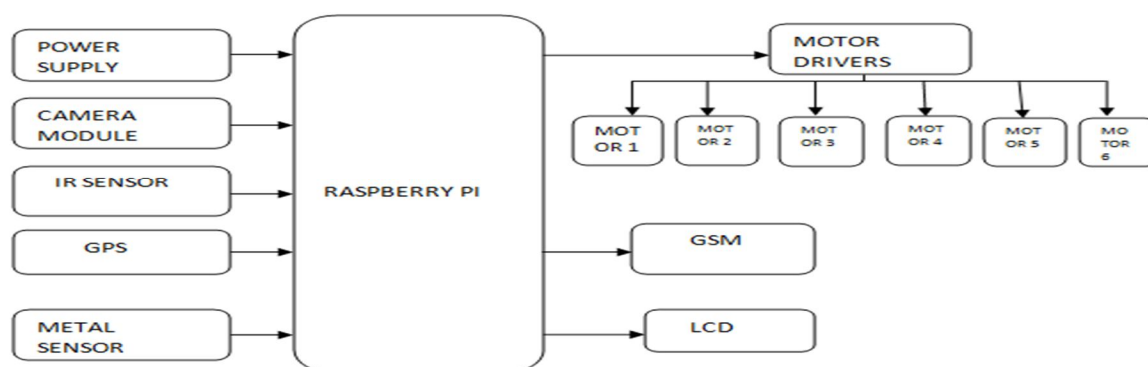
## III. COMPONENTS USED

### A. Raspberry Pi



Fig: Raspberry pi

A Raspberry Pi is a credit card-sized computer originally designed for education, inspired by the 1981 BBC Micro. Creator Eben Upton's goal was to create a low-cost device that would improve programming skills and hardware understanding at the pre-university level. But thanks to its small size and accessible price,it was quickly adopted by tinkerers, makers, and electronics enthusiasts for projects that require more than a basic microcontroller The Raspberry Pi is slower than a modern laptop or desktop but is still a complete Linux computer and can provide all the expected abilities that implies, at a low-power consumption level.
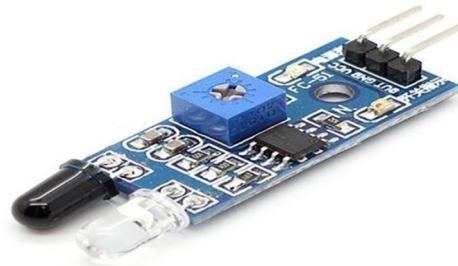
### B. IR Sensor



Fig: IR sensor

An Infrared sensor is an electronic gadget which detects a few parts of the environment. These latent IR sensor measures just infrared radiation, instead of emanating it. The locator is essentially an IR photodiode which is touchy to IR light of a similar wavelength. The working voltage ranges from 3.3v to 5v.

### C. DC Motor

Electric motors are used to efficiently convert electrical energy into mechanical energy. Magnetism is the basis of their principles of operation. They use permanent magnets, electromagnets, and exploit the magnetic properties of materials in order to create these amazing machines.



Fig: DC motors

*D. USB Webcam*

A webcam is a video camera that feeds or streams its image in real time to or through a computer to a computer network. When "captured" by the computer, the video stream may be saved, viewed or sent on to other networks via systems such as the internet, and emailed as an attachment. When sent to a remote location, the video stream may be saved, viewed or on sent there. Unlike an IP camera (which connects using Ethernet or Wi-Fi), a webcam is generally connected by a USB cable, or similar cable, or built into computer hardware, such as laptops.



Fig: USB webcam

*E. GSM*



Fig: GSM module

A GSM inferred named PCS-1990 appeared with late section of north America in the GSM advertise. Presently the acronym GSM is "Worldwide SYSTEM FOR MOBILLE COMMUNICATION ". Since it is existed in the `continent the stage 1 GSM-900 was the principal GSM framework initially produced for just voice and it works in the recurrence band of 900 MHZ, at that point in the year 1995 stage 2 was advanced the contained copy, video, information, correspondence benefits alongside the voice. Later GSM 1800 and 1900 presented utilizing the PCS recurrence 1800 MHZ. GSM comprises of three noteworthy subsystems.

1) Base Station Subsystem
2) Network Switching Subsystem
3) Operation support sub system

The various Accessing Techniques used by GSM are

4) Frequency division multiplexing
5) TDMA, FDMA combination

The outstanding feature of GSM is the subscriber identity module. This is a memory device that store information like the subscriber identification number, the network where the subscriber is empowered to the service.

The second outstanding feature of GSM is air privacy, which is supported by the system. The privacy is attained by the encrypting the digital bit stream, covered by a GSM transmitter, with a specified secret cryptography key that is only known to cellular carrier

*F. LCD*



Fig : LCD

A Liquid Crystal Display (LCD) is a flat panel display or other electronically modulated optical device that uses the light modulating properties of liquid crystal. Liquid crystals does not emits light directly, images in colour or monochrome. Here we are using the 16*2 LCD display.

*G. GPS Tracker*

GPS tracking is the surveillance of location through use of the Global Positioning System (GPS) to track the location of an entity or remotely. The technology can pinpoint longitude, latitude, ground speed, and course direction of the target.



Fig: GPS module

The GPS is a "constellation" of 24 well-spaced satellites that orbit the Earth and make it possible for people with ground receivers to pinpoint their geographic location. The location accuracy is anywhere from 100 to 10 meters for most equipment. Accuracy can be pinpointed to within one meter with special military-approved equipment. GPS equipment is widely used in science and has now become sufficiently low-cost so that almost anyone can own a GPS and many do in a Smartphone, tablet or GPS navigation device.

*H. Metal Detector*



Fig: Metal detector

A metal detector is an electronic instrument which detects the presence of metal nearby. Metal detectors are useful for finding metal inclusions hidden within objects, or metal objects buried underground. They often consist of a handheld unit with a sensor probe

which can be swept over the ground or other objects. If the sensor comes near a piece of metal this is indicated by a changing tone in earphones, or a needle moving on an indicator. Usually the device gives some indication of distance; the closer the metal is, the higher the tone in the earphone or the higher the needle goes.

## IV.     WORKING

Robot is surveying in the borders, which can recognizing any obstacles by the IR sensor later it can send the message by the GSM module. By using camera it will do live video recording it will send the video and captured images will to the servers i.e raspberry pi website. By using GPS module it will send the perfect location, by using metal detector it detect like bombs

The hexapod is the  plays major role it will move uneven surfaces also.

If any unknown  person will be entry to the borders robot will capture the image and it will send the servers, from the servers the specialized person will be match the images by using matlab , if image will be matched by using our database  then specialized person will ignore,if did't match military mans will catch them.

## V.     FUTURE SCOPE

It will be match by automatically without our interrupts  and we can also expanded the storage of the raspberry and  we can also fix gun is connected.

## VI.     RESULT



Fig: Received GPS



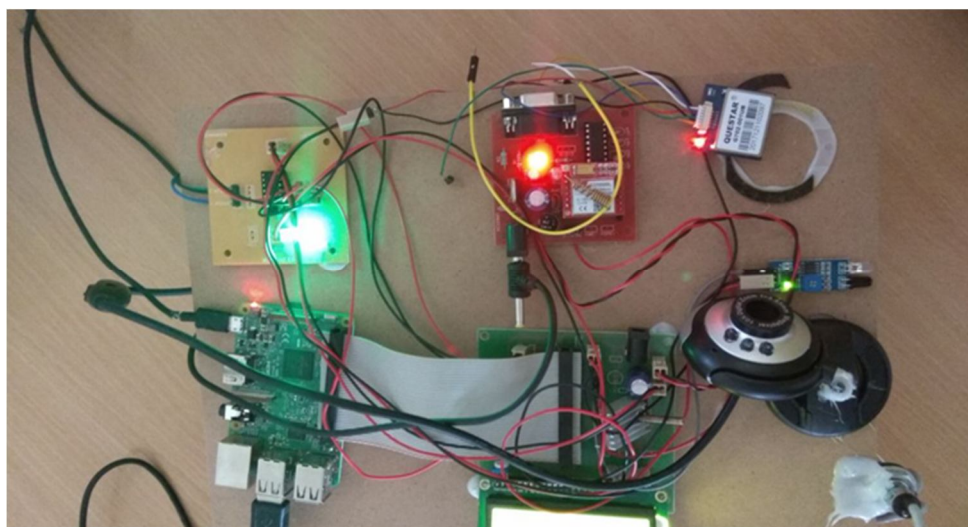Fig: Metal is det



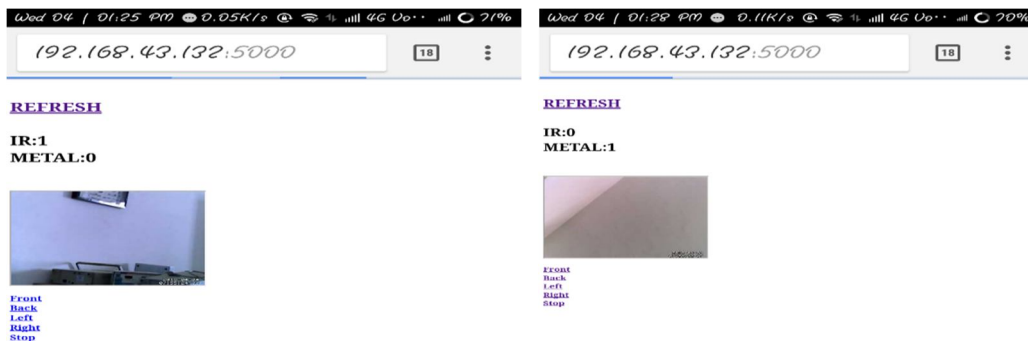Fig: kit demonstration

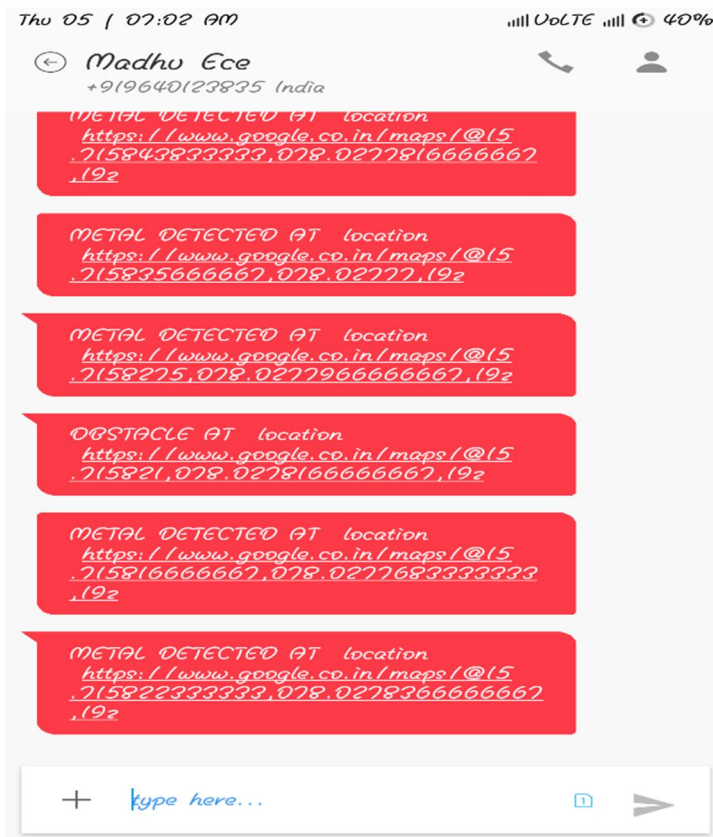Fig: IR detected                    Fig :METAL detector



Fig :messages screenshot when metal or obstacle is detected.

## VII CONCLUSION

This robot which can use not only for the military purpose , it can also be used in the home , banking sectors.It will reduce the time and reduce the human work. If something went wrong we would only lose money it cost to build the robot instead of losing a human life.

## REFERENCES

[1]   Graeme Best, Peyman Moghadam, Navinda Kottege, Lindsay Kleeman,Australasian conference on robotics and automation,dec 2013, Terrain Classification Using a Hexapod Robot.

[2]   Henry A.Rowley,Shumeet Baluja, and Takeo Kanade,International journal of Autonomous Robots,january 2013, Neural network-based face detection.

[3]   Kunal borker ,Rohan gaikwad,International journal of Advances in Electrical and electronics Engineering,2013, wireless controlled surveillance robot.

[4]   Jurij Leskovec, Sentjo st Slovenia, Detection of Human Bodies using Computer Analysis of a Sequence of Stereo Images.

Bibliography



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