MILITARY ROBOT USING M2M PROTOCOL

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ABSTRACT

A robot is design for various purposes like military purpose, industry, for home based application. At border different tanks, missile, guns etc. are used by enemy. This cause problem and harm our soldiers. To avoid the difficulties of soldiers we have design military robot. The proposed method implements a robotic system which is able to monitor various conditions on-field and is sent to android application. To help the military persons in monitoring war field and perform the various operations like diffusing unexploded bomb, detect landmines on war field from the remote location .In our system we have add some special functions such as fire detection , bomb detection, hazardous gas detection, bomb diffusion, alive human detection and firing gun mechanism. Our robot is also capable to detecting and diffusing the bombs more quickly. Also it has the gun mechanism for automatic firing when receiving a command from chief officer. It detects bombs, landmines, fire, and harmful gases. It diffuse the bombs .It has mechanism for firing. It captures the image of current scenario of war field and send to the various officers. So at the critical situation extra force can help at war field. This system is not only used for military but also used in Police department, Bomb detection squad, industry for safety of important machinery and material. It reduces human loss and provides security to army and also citizens..

Keyword: **-** *Temperature Sensor, Metal Detector, Gas Sensor, gun mechanism*

1. INTRODUCTION

We live in home happily only because of the soldiers who stands at border 24 hours to protect us . to protect citizens, their duty is patrolling and while patrolling they faces many problems. To overcome the problems of soldiers we have decided to work on the monitoring robot . Soldiers works under uncomfortable environment where normal person cannot stand . to help the military person in monitoring war field also help to perform the various operations.to overcome the difficulties of soldiers and provide security to Indian army and citizen we have design a project of military robot using M2M protocol.

1.1 EXISTING SYSTEM
- Currently exiting robots have limited range of coverage as they are based on Bluetooth, Wi-Fi, Zigbee.
- Earlier monitoring robots sense one or two conditions.
- Existing robots are manually controlled and they are battery operated.
- Earlier robot haven't gun mechanism for firing.

1.2 NEED FOR DEVELOPMENT

- Use of RF technology (NRF) will provide wide range of operation.
- Used to explore hazardous area.
- Used to detection of hazardous gases.
- Used to continue monitoring of temperature and humidity in particular area.

- Used to bomb detection and diffusion.
- Used to point the target using laser.
- Used to detect alive human on war field.
- Live monitoring current scenario of high alert areas.
- Energy efficient by using renewable resource for power supply.
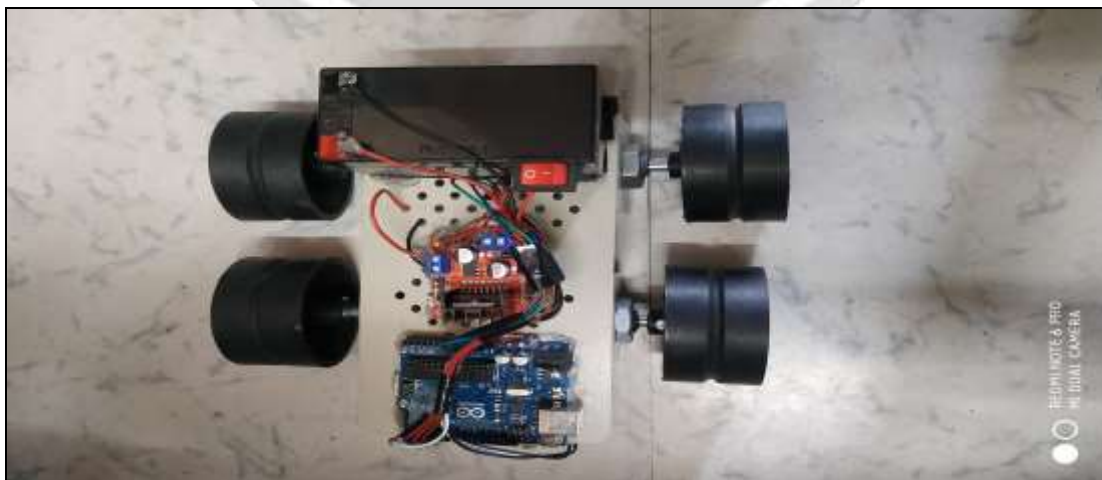
2. PROPOSED SYSTEM DESIGN
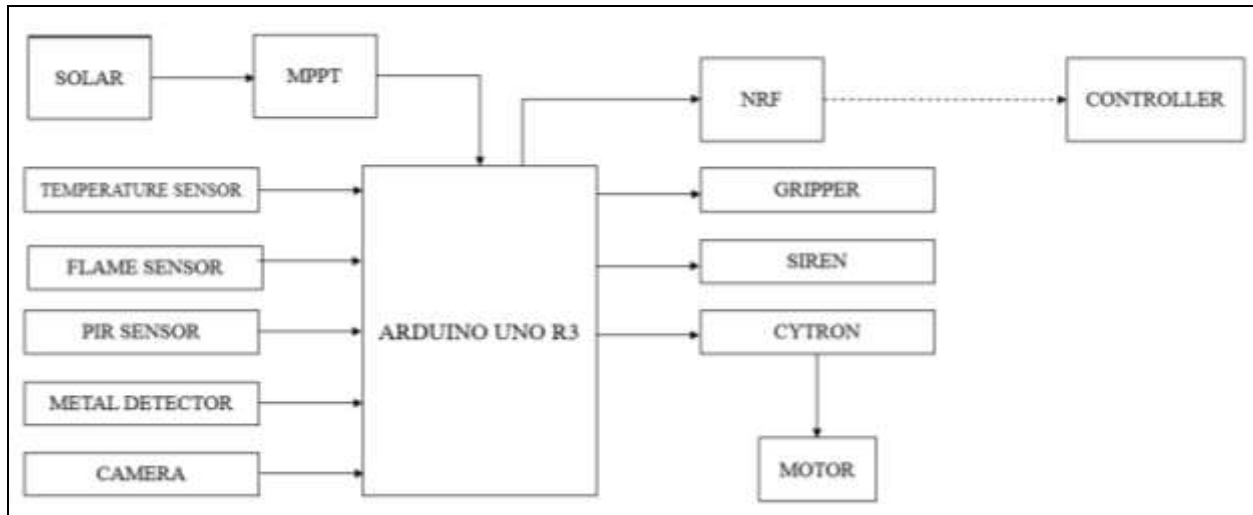
Fig -1: Block diagram of Robot

This robot distributed into different modules which has their own functionality.

- Sensor module
- Power supply module
- Connectivity module
- Control module
- Actuation module

2.1 Connectivity and control module

Fig -2: Connectivity and control module

For connectivity we have use RF module which has the range of 1km and we have use Johnson's motor which is 120 rpm. It is very fast. The motor controller used is Cytron , it is MOSFET based , it has low voltage drop 1.2v .

2.2 Sensor module
We have use various sensor for different purposes such as metal sensor for landmines detection and bomb detection , temperature sensor for temperature monitoring , flame sensor for hazardous gas detection, PIR sensor for detection of alive human , camera for surveillance .

2.3 Power supply module
We have provided power supply by 12 volt battery which is solar operated. The main advantage of robot is operated on solar batteries for continues operation.

2.4 Actuation module
In actuation module we have use gripper for diffusion of bomb .

3. RESULTS

The military robot is design for various functions. The robot performs the operation according to it.

- It detect bomb and also it diffuses the bomb quickly with the help of Gripper.
- It monitors the temperature and humidity at particular area.
- It detects hazardous gases.
- It points the target for firing using laser.
- It detects alive human at war field.

The military robot successfully done all above functions.

4. CONCLUSIONS

In this paper we are designing military robot which is IOT based. Robot is design for miltifunctions such as bomb detection, fire detection, hazardous gas detection, bomb diffusion, temperature detection, surveillance. It is design specially for save the soldiers, police and citizens life. In future we can add additional sensors for monitoring .We can also add night vision camera for surveillance purpose.

5. ACKNOWLEDGEMENT

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