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# DESIGN OF MILITARY ROBOT

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**ABSTRACT:**

Robotics is playing very crucial role in various defense applications. In situations like war, saving life of each solider is very important. With development of technology in robotics today we can think of robot army for several critical situations on war field. Robotics has opened up the doors of opportunities to complete some work through robots. The moving machines with cameras are very popular to have watch on any activities going on in remote areas. Every country is willing to develop the most effective machines for military applications which can either work in war on front or can handle the activities happening in backside camp. Authors have presented the design of robot for military applications to complete some important tasks like moving some material from one place to other, keeping watch with camera.

**KEYWORDS:** Military robot, robotics, Motors, Controller, etc.

## INTRODUCTION:

Robots are always the area of attraction for research and development committees working to develop military applications. The technology has made it possible to develop the robots which are capable of working in all environmental conditions. The waterproof, night and better clarity cameras are available for robotics applications. The uses of drone cameras are very common now a day right from controlling mob to other applications like controlling movement of people in particular area.

Authors have developed the prototype of robot which can be used for robotics applications. Authors have designed it to complete the task like transportation of some material, picking up some material recording a video, capturing the images etc. CAD design for the same is presented in this paper by authors. Computer programming and interfacing of microcontrollers has made it possible to control the movement of robots from remote places. Implementation of artificial intelligent will open doors of opportunities to completely handle working of these machines effectively.

The use of modern technology in war is need of any nation. Even though no one wants to start a war with other nations still every country is preparing with development of weapons and their testing for any worst situation. Vehicles running on ground with weapons added to it can be very important in nation's safety.

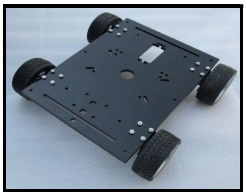
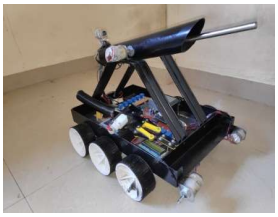
## OBJECTIVES OF WORK:

The objectives are,

- Developing robot for security and surveillance.
- Designing the system for GPS enabled location sharing on robot.
- Designing CAD model for robot.

## SYSTEM REQUIREMENT:

Table.1: Specifications of main components

| Sr. No. | Component Details | Picture of Component |
|---|---|---|
| 1 | **Chassis** Aluminum angle, 2x2 inch |  |
| 2 | **Motor Shaft** Stainless Steel, 4 mm dia. |  |
| 3 | **Supporting Frame** Aluminum strip, 50mm width & 2mm thick |  |
| 4 | **Electromagnetic gun cylinder** PVC 2-inch Dia, Length-600mm |  |
| 5 | **Staircase Arm** Rubber & Iron, Belt-60mm width & wheel dia-80mm |  |

| | | |
|---|---|---|
| 6 | **Gripper arm support**<br>Stainless steel, length-200mm |  |
| 7 | **Screws**<br>Length-10mm,20mm,30mm |  |
| 8 | **Joints**<br>Stainless steel, Length-50mm-strips |  |
| 9 | **Bore Wheels**<br>PVC, 4 inch dia. |  |
| 10 | **Wireless Camera**<br>1.8Gram, 120mA, 5V |  |
| | **Zeegbee Transmitter-Receiver**<br>250Kbps, 200Ft range |  |

## SYSTEM DESIGN:

Authors have developed the CAD design for robot hardware to be developed. The detail views are as shown below.

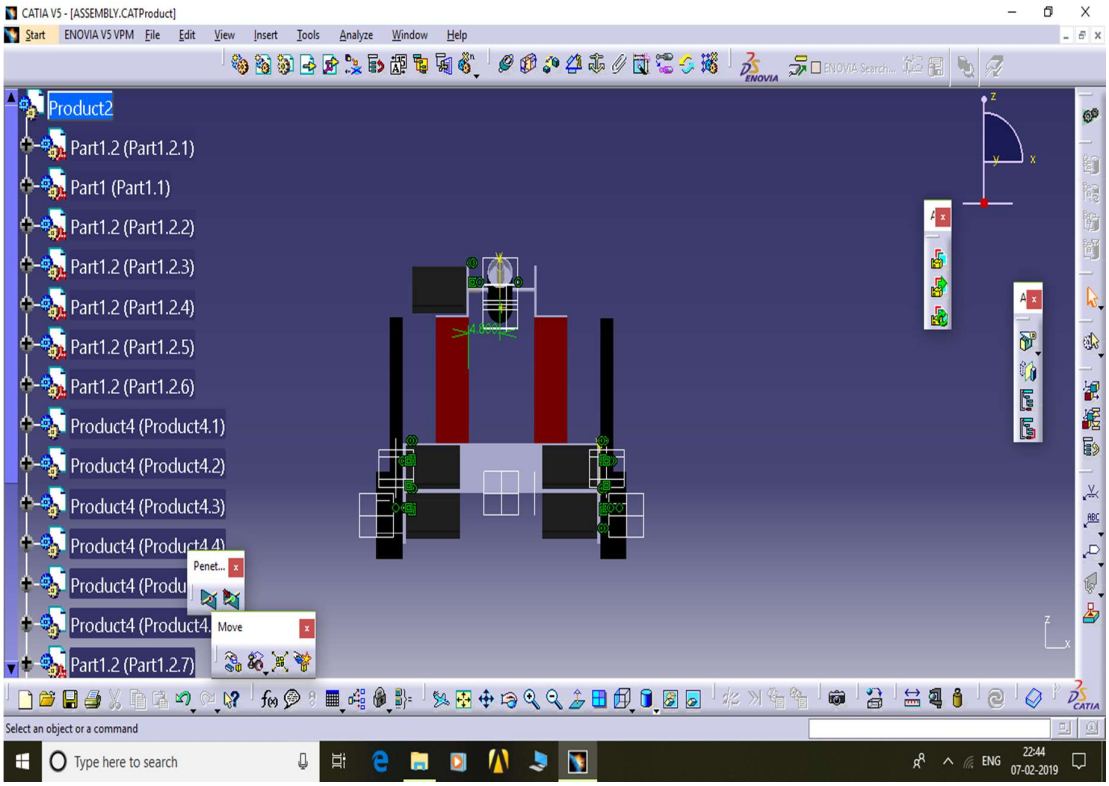



Fig.1: Front view of CAD Model for Robot

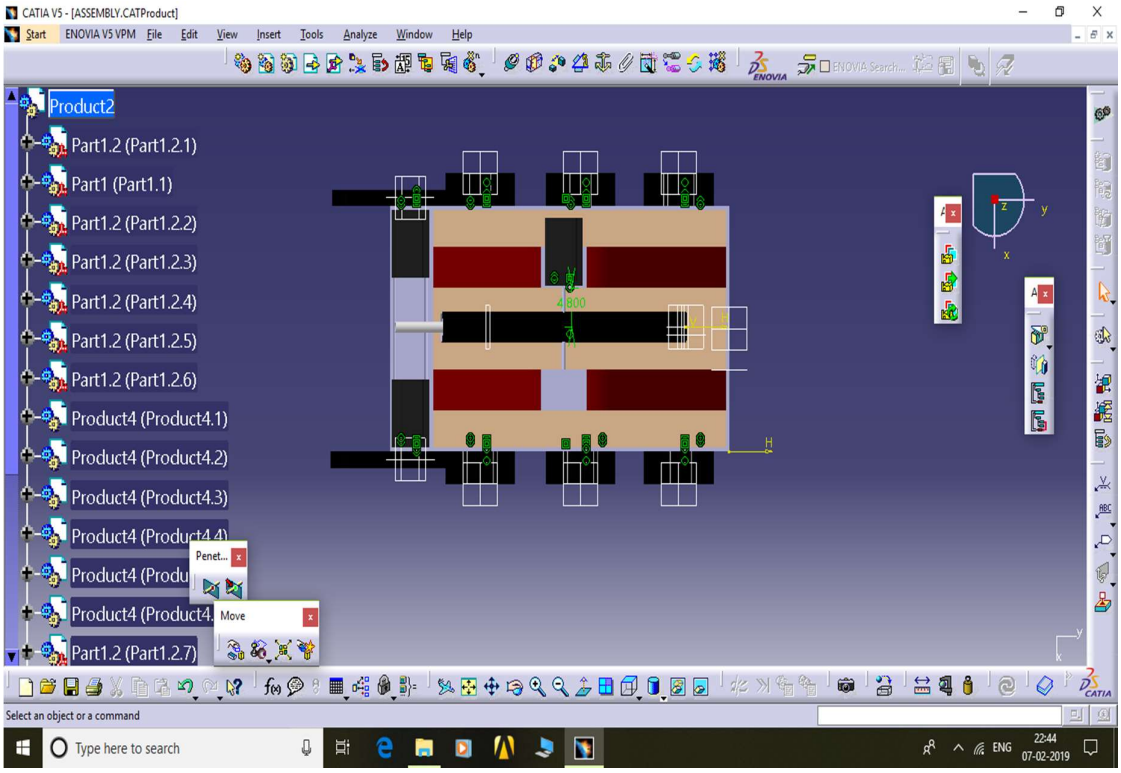



Fig.2: Top view of CAD Model for Robot

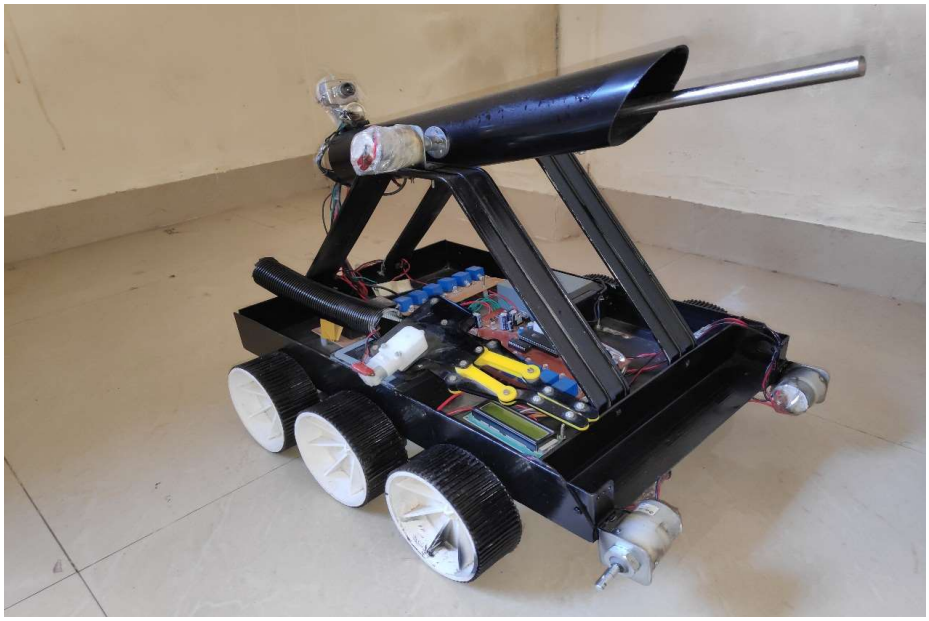


Fig.3: Hardware Developed for Military Robot

## FUTURE SCOPE:

The developed robot can be further modified with use of various ultra-sonic sensors, artificial intelligence, accurate GPS system and high definition cameras. The use of hardware like Arduino can be implemented to reduce the cost of control circuit. Selection of material for capacity to work in all temperature ranges.

## CONCLUSION:

Robotics is developing in many countries at fast rate since few years. The applications of robotics are common now a day for surveillance purpose. The capacity of surveillance, audio-visual recording and location sharing makes these robots suitable for applications of military operations. For any machine when it is used for saving a human life can be considered as the most important application. Robots for wars are most awaited weapons for all countries over the world. Every country needs replacement of soldiers with machines as this can be most revelatory technology if machines found suitable for war. Authors have developed and hardware and also presented the CAD design for military robot in this paper.

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