IOT BOMB DEFUSER

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Abstract - *This paper is for introducing two technology which when combined together can form tremendous useful devices for weaponry and ultimately society because the robot is a unique technology to serve society in different application and in several fields, so we all know the importance of robots nowadays in society and developing technology the number of robots used worldwide is constantly increasing. they're more and more present in different workplaces like dangerous areas, processing operations, medical environments, military, manufacturing inaccessible areas etc. again we've got one unique communication technology now that's IoT. This paper will explain mostly IoT technology because IoT is barely technology and is phenomenal. Now the web is being used to attach various objects like cars, sensors, controllers, TVs, machinery, transport containers and electrical appliances, creating the web of Things (IoT).The networked and user interfaced robots, like rescue robots, human assisting robots, health care robots and robots for military applications.*

The evolution and growth of the information superhighway because as a technology we are able to control the robot with high distance, high speed, and high accuracy. The solution on all communication and control over the internet which is totally wireless and we can optimistically expect to an IOT-assisted world that's connected, smarter – and better.
Disposing of any explosive materials is a very dangerous and risky job. Bomb disposal is additionally a very delicate job. The project has been designed to keep visible this law and order and the situation in throughout the planet, a day many trained soldiers are either injured or lose their lives while defusing bombs and for that, we will use the robot for disposing bomb and might save the lives of our people..

1.INTRODUCTION

Nowadays IoT technology taking granted for many of the controlling applications like medical, defense, automobile, industrial project, smart cities, and many more. it's been considered as another technological revolution. the web of Things (IoT), also called the Industrial Internet, has been defined as a worldwide infrastructure for the knowledge society, enabling advanced services by interconnecting (physical and virtual) things. A high number of applications and controllers can get connected to the IoT network. So with the assistance of IoT technology DEFENSE systems also can get a complicated defense device within the style of BOMB deposing ROBOT. As we all know casting off bombs may be a big task for a personality's being there's always the fear of loss of life in case any mistake's done by an individual's that's why robotics technology can provide a solution to the current problem and with the assistance of robots, we will lose bombs. Now the question arises here how we will control robots ?. There are many technologies to manage robots these are wireless or wired. RF control, Bluetooth, WIFI, GSM control and etc. All these techniques have their pros and cons and a few limitations too so instead of the use of this all we will escort IoT (internet of things) a brand new trend of communication and controlling This includes a lot of advantages during controlling.

1.1) WIRE DILEMMA

In fiction-land, disarming nearly any bomb may be a matter of cutting the proper wires within the right order — usually, each wire are going to be given a particular color, and an assistant will read from a manual: "Clip the red wire, then the blue wire, then the yellow wire..." The implication is mostly that if the incorrect wire is cut, the bomb will explode instantly, killing the person disarming it and everybody else within the blast radius. Combines Race Against the Clock with the necessity to create absolutely sure you are making the correct decision for dramatic tension. Of course, it's never as easy as just following the manual — generally, some quiet subversion is employed to heighten tension.

1)An earlier mentioned colored wire isn't there.

2)All the wires are of an identical color.

3)There are plenty of wires inside the bomb.

4)Cutting any wire at random might be a nasty play.

5) The person reading from the instructional manual changes his mind between and at some point he might get confused is it red, is it blue, or maybe green are there any yellow?

6) What if the person who is cutting the wire doesn't know the color. (e.g. Violet, peach, purple, etc.).

7) The person who is reading from the instructional manual says "It says to cut the blue wire.." [cut] "... after cutting the red one...".

8) Cutting the wrong wire doesn't trigger an explosion, but causes the timer to hurry up.

9) The guy reading the instructional manual asks a pair of specific features of the bomb and also the person cutting the wire answers correctly.

However, the guy reading the manual misinterpreted the answer causing him to read the wrong instructions.

2. BOMB DISPOSING ROBOT – APPLICATION OF IOT

2.1) Automatic part of the robot:

'Any machine programmed to try to do work' is the definition of a robot. However, basic machine automation is now so commonplace that this classic 'a machine with intelligence' is the definition that is being replaced with a more apt phrase. But even this fails to actually capture the complete essence of what a robot has the potential tube, particularly since the modes of interaction Between robots and their physical or virtual environments can be so diverse. a robot may have an on-the-spot physical.

A manifestation that enables it to mechanically act and react in the world, but it should be operated in a virtual world using presumed technologies as a channel for eventual real-world interaction (e.g., communicate contextually information to remote observers). A robot may have perception; i.e., it's a capability to assimilate real-world inputs, make 'circumstantial sense' and to its programming and what it's learned.

HOW TO DISPOSE A BOMB (BASIC IOT DESCRIPTION)

For building bomb defusal robot we can use a wire cutting arm with a all direction moving vehicle so that it can move in dangerous area according to operator and it

will also comprise of a camera for showing up real-time image for further actions.
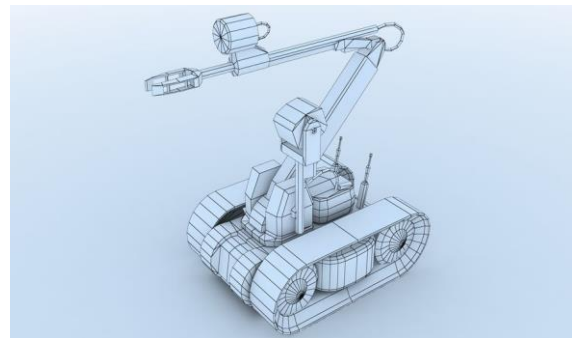
Fig :- BOMB DISPOSING ROBOT

2.2) IOT TECHNOLOGY

The Internet has been part and parcel of the social animal's life. Nowadays 3G and 4G mobile internet. Wireless technologies and mobile computing became cheap and have gained more Popularity. so IOT technology can lead all other communication and control applications. In 1999 Kevin Ashton founded the internet of things but it was already present from the 70s as Embedded internet Billions of sensors and controlling units get connected over IoT which have a more capability to not access the utmost application, sensors, and communicate to this but also an entire control we've through IoT. Internet of Things is a way of connecting the physical world with cyberspace. "Internet of Things" might be a brand new thing that features the ability to not only communicate and control applications but its new era of communication business, technology, and fast lifestyle. It is the concept of system and controlling devices. The idea of connecting objects to each other and to the online isn't new, it's reasonable to ask, "Why is the web of Things a newly popular topic today?" It has been popular because of Open Source, Security, Big Data, and many more.
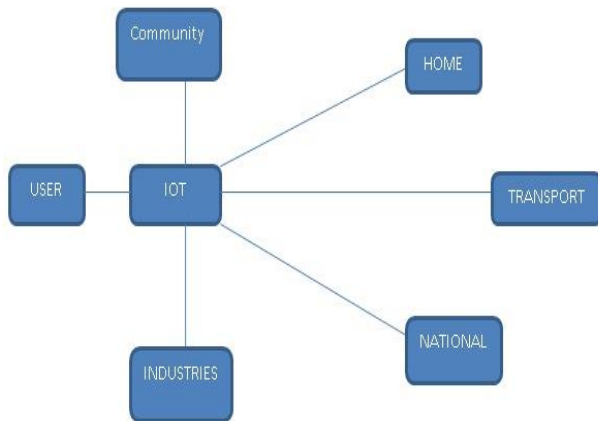
2.2) CONNECTIVITY AND INTERFACING CONNECTIVITY:

The project of the bomb-defusing robot is operated using remote internet. Using the internet connection, the robot is operated through the distant locations where human beings cannot reach (Danger zones). It uses interfacing of GSM module to arguing board. The robot consists of sensors like an IR sensor, metal detector, twilight vision camera. And edge tool at its arm to cut the wires on a bomb to dispose of it. Each one's applications are described below: -

IR SENSOR: -

Infrared (IR) sensors are employed in this robot for distance measurement purposes the sunshine reflected from the front side object gives a signal that there's something obstacle present ahead of the robot the response of distance measurement using IR sensor supported reflected amplitude from the objects is non-linear and depends on the reflectance characteristics of the particle surface. As a result, the most use of IR sensors in robotics is for obstacle avoidance. Their inherently fast response is incredibly attractive for enhancing the real-time processing of a wireless robot in distance measurement and obstacle avoidance. Distances with reduced response times are accurately measured by low-cost IR sensors. The light intensity back-scattered from objects and measuring distances of up to 1 m is supported by a brand-new IR sensor.

METAL DETECTOR: -

The detector sensor working is when the electromagnetic field is transmitted from the search coil into the front side of the robot Metals within the electromagnetic field will become strengthened & reflect an electromagnetic wave of their own. The sensor comprises a search coil that receives the retransmitted electromagnetic wave & sends signals to the controller of the presence of metal.

NIGHT VISION CAMERA: -

The distant operator operates the robot using scotopic or night vision monitoring and controlling applications. This robot is capable of capturing pictures and videos at night that in darker places and sending it to remotely operating master for further movements. This method of operation can be utilized in the time of wars and spying purpose.

BLOCK DIAGRAM:-
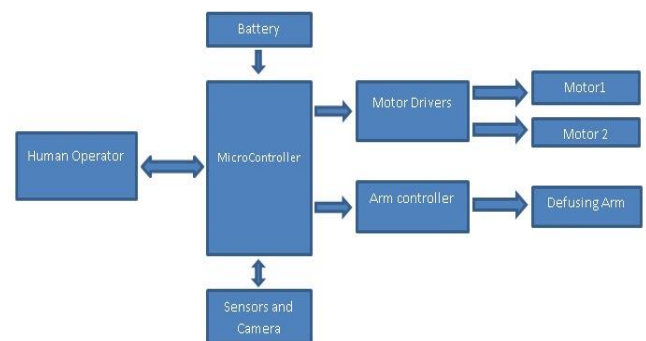
Fig:- BOMB DISPOSING ROBOT BLOCK DIAGRAM

INTERFACING GSM MODULE AND ARDUINO

In this project, the Arduino board is used to control the robot arm and its movements and directions will be controlled using C language coding. The GSM module will provide internet to it so that it can be remotely operated using commands. The mobile app will provide actions to control the robot's movements. The interfacing of the GSM module and Arduino board is shown below:-

Fig: - INTERFACING OF ARDUINO BOARD AND GSM MODULE
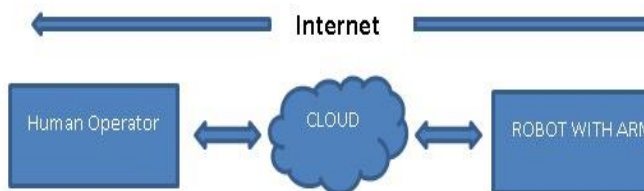
Fig: - HUMAN AND ROBOT INTERACTION

3. CONCLUSION

The proposed system of bomb disposing robot is going to be very useful within the area of security and spying of enemies further as the areas where the citizenry cannot reach the robot will try this bomb disposing work. This robot is additionally remotely operated through the web so there's no harm to human lives. So, there is a robot, technology of IoT, and Arduino Interfacing, GSM module and connectivity all at once can form the simplest bomb disposing of the device which might be very helpful to avoid wasting human life using the net.

4. REFERENCES

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5. BIOGRAPHIES

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