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Missile Tracking And Detection System By Using IoT Technology

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Abstract: **Millions of landmines are buried underneath the soil in tens of nations, waiting to harm innocent humans. That's why hundreds of companies around the world participate in demining process. Typical demining is a really hazardous and also risky operation, where recognizing the setting of hidden mines is one of the most dangerous of all remaining steps. For this, a number of investigates were performed in order to lower this danger, and also a number of technologies exist. We intend here to introduce a system that eliminates the requirement for people in the mine field by replacing them with a from another location regulated detection car. This automobile will certainly be linked wirelessly to a base station situated at a safe range from the threat zone. Doing so, this system will help in saving lives, lowering expenses and also improve efficiency in the mine discovery process. The GSM innovation made use of to transfer and also receive information permits remotely operating the system within a great range. Voice ran robotic is made use of for one moving object is created such that it is moved according to commands are offered by the voice recognition module which command is gotten by robot and also robot is matched the offered command with saved program and after that set the command as per voice using wireless communication.**

Keywords: **IOT (Internet Of Things); Metal Detection Sensor; GPS; GSM; Metallic Components;**

1. INTRODUCTION

According to official figures, more than 100 million landmines lie buried around the world. To help stop the destruction, the scientific community must develop effective humanitarian demining. The goal of military demining is to clear enough mines quickly to allow troops through a particular land area. The goal of humanitarian demining, in contrast, is to clear enough mines to permit normal civilian use of the land. To aid scientific inquiry into mine detection, this paper reviews the major current and developing technologies for mine detection. Robotic technology has flourished tremendously over time. The capability of a robot to track and follow a mobile human subject is of high interest as this ability can be used in numerous applications. On the other hand, the risk accompanied with their existence should be always an alarming fact to people living near the suspected area. According to the 'International Campaign to Ban Landmines Networks', more than 4,200 people, of whom 42% are children, has been falling victims to landmines. Other than direct injury for humans, mines deprive humans from the usage and exploitation of important land resources such as fertile land for agriculture or any usage. Thus this system allows us to detect the landmine using voice controlled robot.

2. RELATED STUDY

A comparison between the importance of detection landmines and the efforts that have been deployed to automate the process and to relieve the human detectors from this highly dangerous work will show the lack of technology needed in this area of research. Consequently, we came to the objective of our project, which is to design and implement an automated communications system for the land mine detection. The system will be mainly composed of a central unit that will provide a wireless access point connection to another small unit that we will be calling Robo-pi. This latter is supposed to replace the human detector to do the mission automatically and send data to the central unit for later analyzing. There were some literatures which referred before starting the work to take a good idea and to check the possibilities of getting the needed results. Jadhav. 2013) have shown in his study about the automotive localization system using GPS and GSM services. The system permits localization of the automobile and transmitting the position to the landmine at the receiving station. This system is also provided with GSM to get a text message about the where about of the mine. This literature has some weakness as researcher in some places where there is no provision of GSM networks it is difficult for communication also did not mention more needed information of the different type of metals used for the mine. This is received by a GSM modem in the device and processed by the Spartan processor and the processor sends command to a GPS module in the device. The GPS module responds with coordinate's position of the mine. This position is sent to the station as a SMS to the user with date, time, latitude and longitude positions. This literature has some weakness when consist air masses in the sky GPS will stop the work and do not send message and determine the location. Also

some strength, using an FPGA controlled system we can easily track the mine which ensures safety for the troops in the army vehicles and also lots of uses for public transport system. This literature has some weakness as the delayed communication networks to send message recorded when the accident and has some strength can capture the streams of data provided by their accelerometers, compasses, and GPS sensors to provide a portable black box that detects blast accidents. The first literature study has done about the accident detection and send message using GPS and GSM modems. The second study is designing the metal detection sensor, which checks if the accident has been caused due to the blast of mines. Third literature to design station alarm system in the event of blast. Fourthly, study designing mine tracking system using GPS. Finally, all the literatures found are good and gave information about the application, working principle, how to design the System and choose best program to design the circuit this gives us the ability to write the paper and also to design accident notification system.

3. AN OVERVIEW OF PROPOSED SYSTEM

The robotic vehicle consists of a dc motor which is used for the movement of the vehicle. It also consists of a metal detector sensor which is placed at the bottom of the vehicle. A buzzer is present as an alarm system if the metal detector sensor detects the landmine present under the ground. When voice command is given by the android user the vehicle starts moving. Here the voice commands are converted to text then it is transferred via Bluetooth module. This conversion of voice to text is done by conversion engine. If the landmine is detected the exact latitude and longitude position of the landmine is captured and updated to the cloud via Wi-Fi module. Thus the landmine can be detected using voice control. The cause of constructing "Raspberry Pi based totally bomb detection robot with live streaming and monitoring" is a venture and further, research is needed to apprehend the entire capacity of at ease and beneficial machines. "As in keeping with the prevailing situation, human dependencies on the generation and destiny trends robots are going to be used as a really perfect substitute for man or girls in all factors of existence". Metal detector consists of copper coils. If any metal is detected, it sends the signal data to controller and with the help of GPS it indicates the latitude and longitude of the exact position.

Fig.3.1. Raspberry pi controller.

GSM through Attention Command sends the SMS. We use motor driver L298D because we provide only +5v power supply and +12v is required to rotate the motor so only L298D has the property to rotate the motor even if the input power supply is +5v.System consists of two main modules, which are the control station, which runs on a PC or Laptop and the remotely controlled robot. The control station consists of three integrated modules consisting of Metal detecting component, GPS data collecting component and Remote control component.

Fig.3.2. Working model.

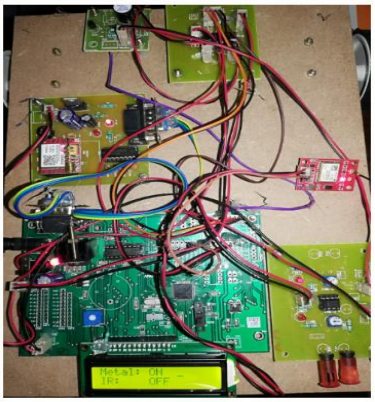

Fig.3.3. Metal detected or IR sensor activated time.

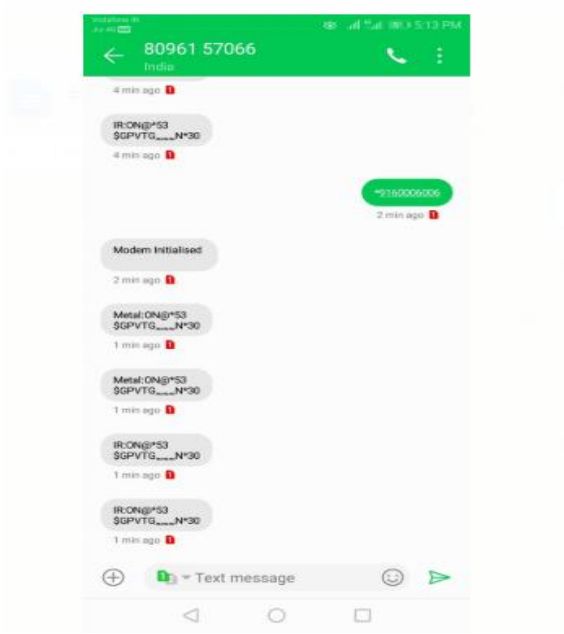

Fig.3.4. Output results by using GSM module.

4. CONCLUSION

Nothing should be more important than the lives and safety of our country's army men who risk their lives for our safety from external enemies. There have been many cases of fatalities and injuries due to explosion of landmines. Till date a lot of research and development has been done and different types of landmine detection robots have been developed each having its own advantages and disadvantages. The variation in these robots is based on the controller or processor used, sensor interfaced, GPS tracking system and the locomotion technique used. It has been successfully proven through the prototype that the proposed theory and concept for land mine exploring the platform works perfectly. The detection of the burried mine is done by using metal detectors since most landmine contain metal components. The prototype is capable of detecting the burried metal piece, marking the exact location, and most importantly the prototype is controlled wirelessly by the operator from a safe distance.

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