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Multifunctional Unmanned War Vehicle

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Abstract :-In order to face new challenges, every system is automated. Since it requires less manual operations, every field prefers automated control systems, especially giving tremendous importance to electronic systems for accurate control, as they are flexible, reliable and economical. In the present scenario of war situations, unmanned armored weapons plays very important role. Right now we have unmanned aerial vehicles used in battlefields and for spyactivities which are not suitable for the battles on the ground. So we are introducing this unmanned armoured vehicle which is controlled by ground station using wireless communication with camera feedback which lead to reduce human losses. The main aim of this project is to design, develop and operate the robot via a smart phone, used as remote control device. We have created a system which can receive and implement the information received from the smart phone using IOT to further control motors which in turn drive the robot in any required direction.

Key words:-camouflage technique, Tele-operated, multipurpose

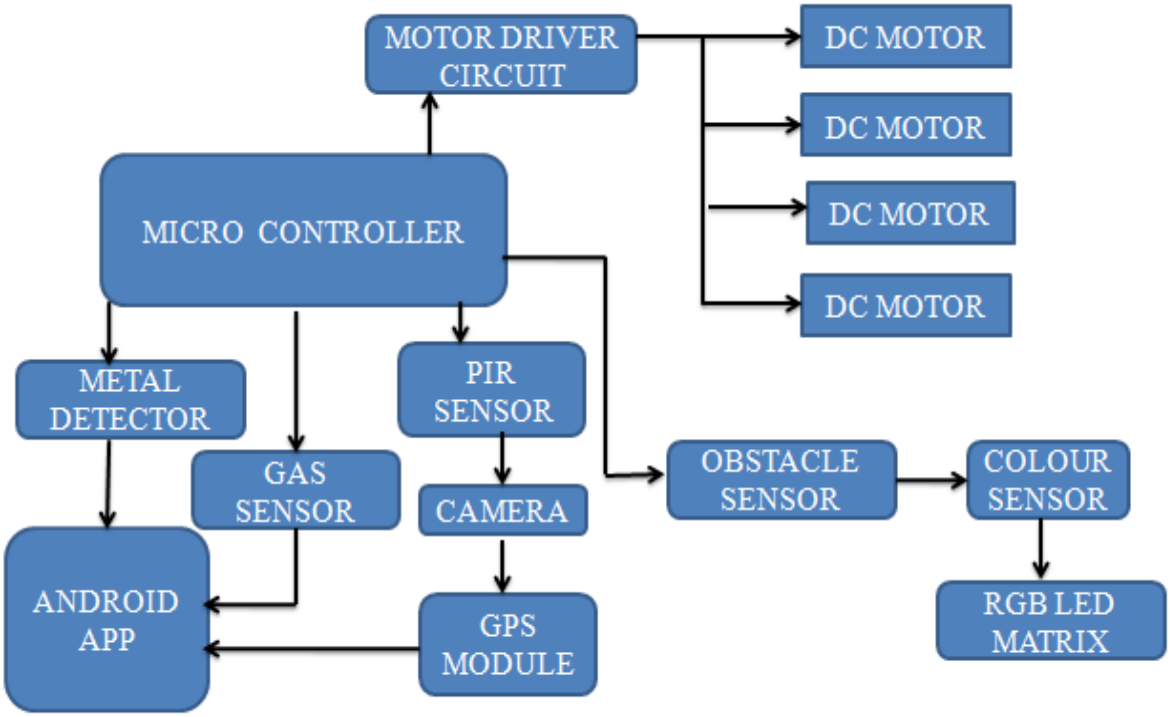
I.INTRODUCTION

A robot is an automatic device often replicates a human or animal. Modern robots are usually guided by a computer program or electronic circuitry. Robots are used in performing repetitive and dangerous tasks. Basically Army Robot can perform tasks such as locomotion, sensing the harmful gas, sensing the humans under the surface, metal detection. Army Robot is an indepedent robot consisting of wireless camera which can be used as a spy. This Army robot is more efficient compared to the human soldiers. The main aim of the paper is to implement a Camouflaged technology based Wireless multifunctional Army Robot which can be controlled through smart phone using wi-fi.

IOT stands for “Internet of Things”. The Global Standards Initiative defined the IOT as “the infrastructure of the information society” on Internet of Things (IOT-GSI) in 2013. Objects to be sensed or controlled remotely across existing network infrastructure using IOT, creating opportunities for more direct integration of the physical world into computer-based systems, and resulting in more efficiency, accuracy and economic benefit along with reduced human intervention.

The name Wi-Fi (short for Wireless Fidelity) is originally the name given to the certification granted by the WECA (Wireless Ethernet Compatibility Alliance), the institution responsible for maintaining interoperability between devices under the 802.11 standard. By abuse of language (and for marketing reasons) the name of the standard is the same as the name of the certification. De facto a Wi-Fi network is actually a network operating under the 802.11 standard.

II. Architectual Design

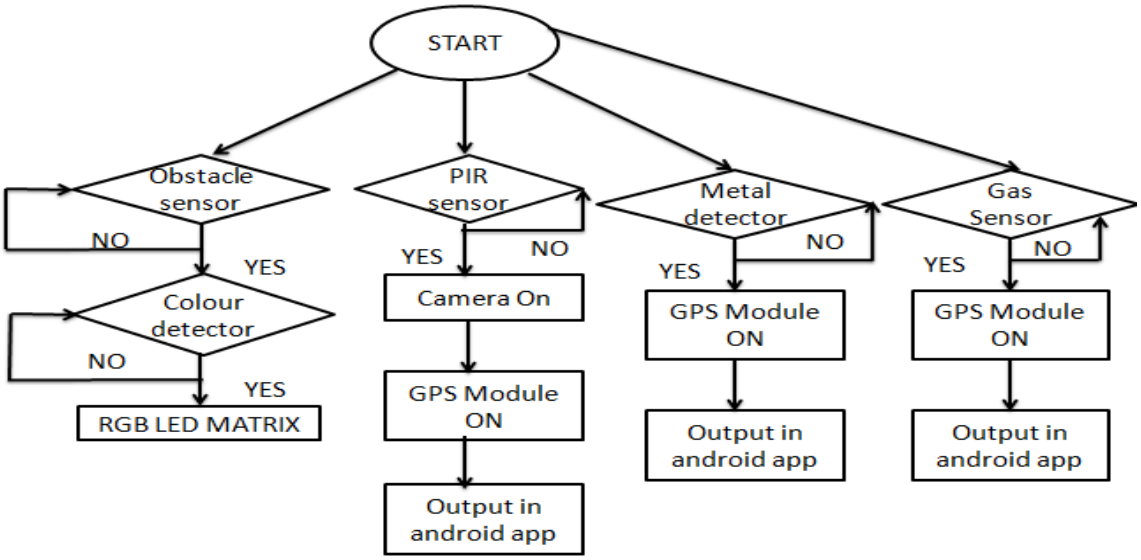


III.WORKING

A data flow diagram is nothing but a graphical representation of the "flow" of data through an information system, modelling its process aspects. A DFD is used as a basic step to create an overview of the system without going into great detail, which can later be elaborated. DFDs also used for the visualization of data processing.

A DFD shows what kind of information will be input to the system and output from the system, how the data will advance through the system, and where the data will be stored. DFD does not show information about the timing of process or information about whether processes

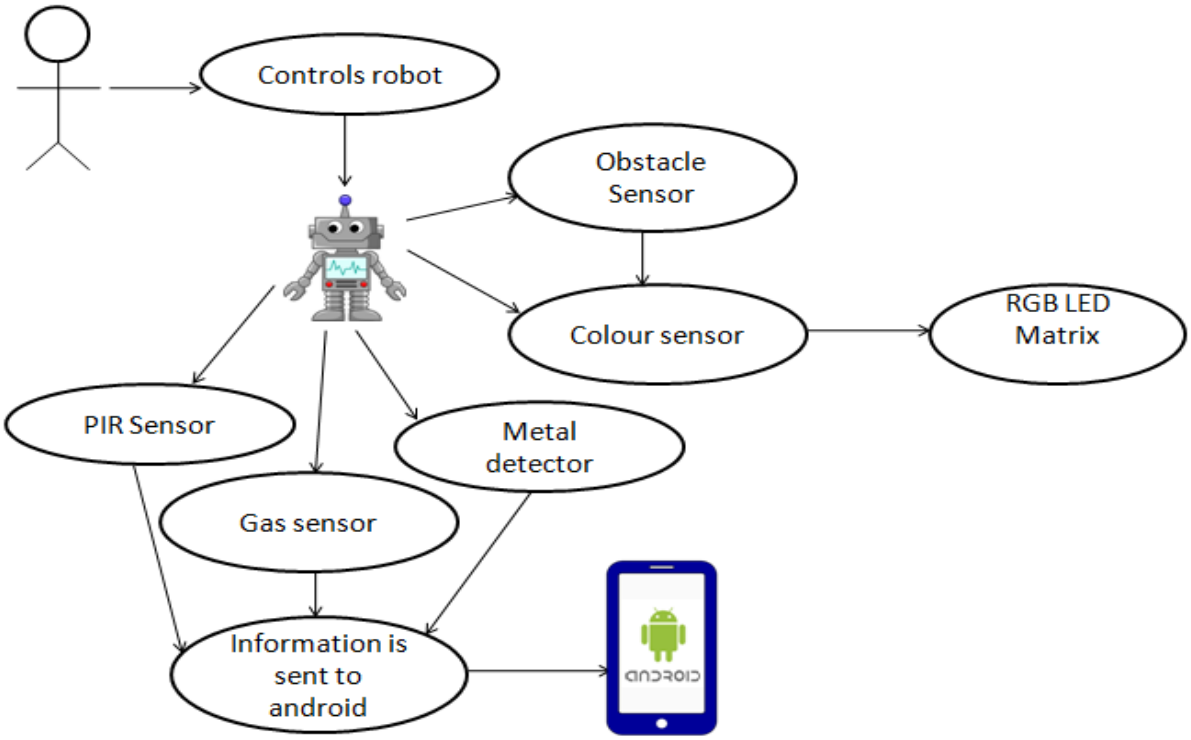
willoperate in sequence or in parallel unlike a flowchart which also shows this information.



Above figure represents the data flow diagram of the camouflage army robot. It contains four sensors. An obstacle sensor, PIR sensor, Colour sensor, Metal detector and a gas sensor. In the course of robot movement if any obstacle is sensed then first it detected the colour by using colour sensor and that particular colour is displayed in the RGB colour matrix. If any human comes that is detected by PIR sensor and as soon as the human is detected camera and GPS turns on and that particular live video is sent to the android app.

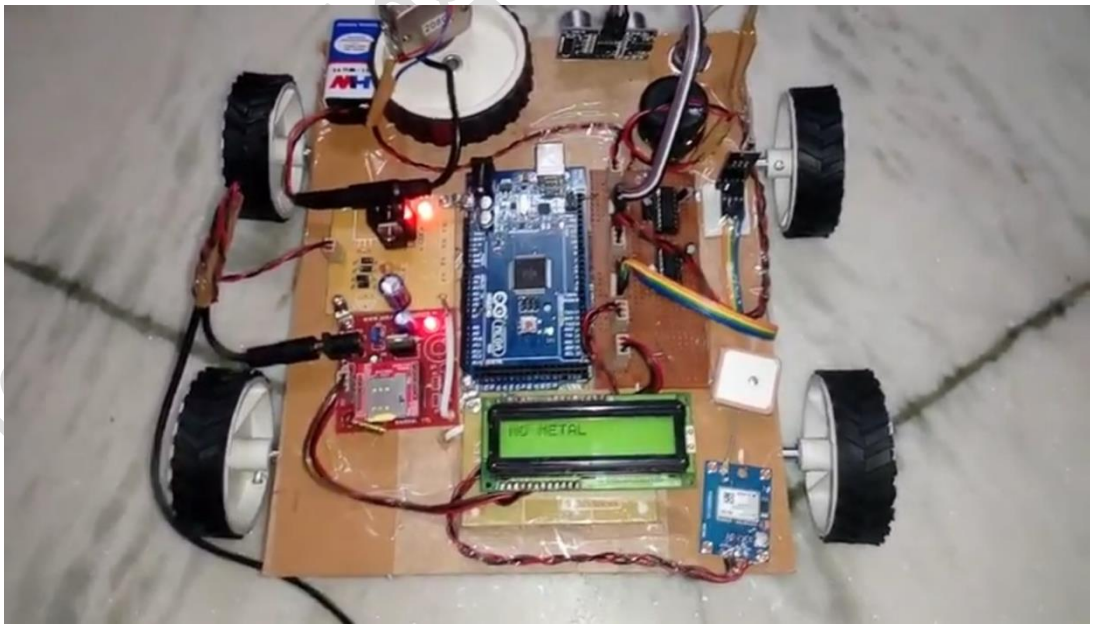
If any landmines are present then metal detector detects it and through GPS information will be sent to the android app. If any leakage of gases are present then those gases are detected by gas sensor and that particular information is sent to the android app.

A use case diagram represents user's interaction with the system that shows the relationship between the user and the different use cases in which the user is involved. A use case diagram can identify the different types of users of a system along with different use cases and will often be accompanied by other types of diagrams as well.



Use case itself might drill into a lot of detail about every possibility, a use-case diagram is used to obtain a higher-level view of the system. "Use case diagrams are nothing but the blueprints of a system". Use case provide the simplified and graphical representation of what the system must actually do.

IV. RESULT



- Successfullybuilt a movable vehicle which is capable of manual control through smart phone.
- Added a rotating camera platform that can target the enemies with human control.

- Successfully implemented features for sensing human motion, harmful gas detection, under ground metal detection and mainly colour sensor for camouflage technique.
- We have made use of android services for the control of the vehicle from any distance.

VI. CONCLUSION

The main objective of our project is for Border security by using camouflage technology and has been successfully accomplished wireless using WI-FI module driven by an Android App. We used PIR sensor principle to detect living beings. By using IR Sensor transmitter receiver we can detect the obstacle coming in path. Gas sensor and metal detector are also being used for sensing the toxic gases and the metal weapons if any. In this system we used camera to transmit the data from border to the official area or headquarters. In the scanning path if any obstacle or enemy is detected then firing starts and control action take place. Thus in defense application it is possible to provide 24 hour security.

VII. APPLICATIONS

- A Camera is attached to show the real time data wireless through RF.
- A sensor to detect the toxic gases.
- A Metal sensor to detect metal weapons and if any under ground metals.
- A PIR sensor to detect human intruders or soldiers beneath the earth.
- An IR sensor which is used for obstacle detection
- Manual aiming through laser and firing the targets.
- A sensor that can detect the underground colour and act as camouflage to the ground.

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