Review On Alive Human Detection Robot For War And Rescue Operation

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ABSTRACT

The principal purpose of this embedded application is to design a remote controlled robot that can hit upon stay humans and transmit the vicinity information wirelessly. It conflict fields and places in which war or disaster has occurred. Detection is also required in risky sectors like boilers, reactors wherein most effective legal man or woman can input. The stay body sensor in this venture is a special sort of sensor called PIR sensor. Any alive frame with a temperature above absolute temperature emits radiations which can be invisible to the regular eye. It Senses those passive infrared rays to come across the live human.

Keyword: ATMEGA328 Microcontroller, Zigbee transceiver, Camera module, PIR sensor.

1.INTRODUCTION

The live body sensor is a special type of sensor. It senses the passive infrared rays, which are always emitting from the live bodies that is human bodies. In this project we are using ZigBee for the efficient wireless communication. The GPS receiver receives the Longitudinal and latitudinal value when the system detects the movement of the human. This data is sent to the remote PC using ZigBee transceiver. The whole system is placed in a robotic car. The car is moved remotely using the C# software running in PC through the ZigBee. According to the field of Urban Search and Rescue (USAR), the probability of saving a victim is high within the first 48 hours of the rescue operation, after that, the probability becomes nearly zero. All of these tasks are performed mostly by human and trained dogs, often in very dangerous and risky situations. The rescuer may become a victim who needs to be rescued. This is why since some years mobile robots have been proposed to help them and to perform tasks that neither dogs nor existing tools can do. We will focus only on robots which will work in a disaster environment of manmade.

2.LITERATURE REVIEW

The implementation of Microwave life detection system to locate human subjects under earthquake rubble or behind barrier was based on microwave beam of low frequency i.e 450 MHz so that the communication between human subjects and earthquake rubble or construction barrier was less.[1] In implemented system to detect victims with image taken by an IR (Infrared camera) in an intelligent way , the detection of an object in an image is so complicated so they used neural network method for recognition of the body of human in taken image.[2] [5].

The proposed a network system and an algorithm for a rescue robot to obtain its position under collapsed area used omnidirectional sensor which has certain area of coverage for reporting the observing quantity and temporary tag . Because of this , the system was construct temporary communication.[3] The designed robot to operate in outdoor environments such as disaster area was used wireless communication and due to limitation of wireless connection and the complexity of rescue operation , the full operation of robot can not be constantly supervised by human operator therefore they used autonomous robot.[4]

The proposed an autonomous robotic vehicle that moves in the earthquake prone area and helps in identifying the alive people and rescue operation was based on embedded PIC Microcontroller and Zigbee transmeter and receiver. In this system the battery backup for camera was weak so they has use a solar panel.[6] The proposed an autonomous robotic vehicle that moves in earthquake affected area used AVR microcontroller which is reprogrammable. But remote controlling was designed for limited distance. For this system, the battery backup was not sufficient. So they used GSM technology by adopting image processor which was more effectively.[7]

3.SYSTEM MODELS AND ASSUMPTIONS

Proposed system:

The proposed robotic system can be design to detect alive human body in an affected area which is useful for rescue operation. These system is based on ATMEGA328 single board microcontroller. These system uses PIR sensor to detect alive human reliably. The block diagram of alive human detection robot is given in Fig.1
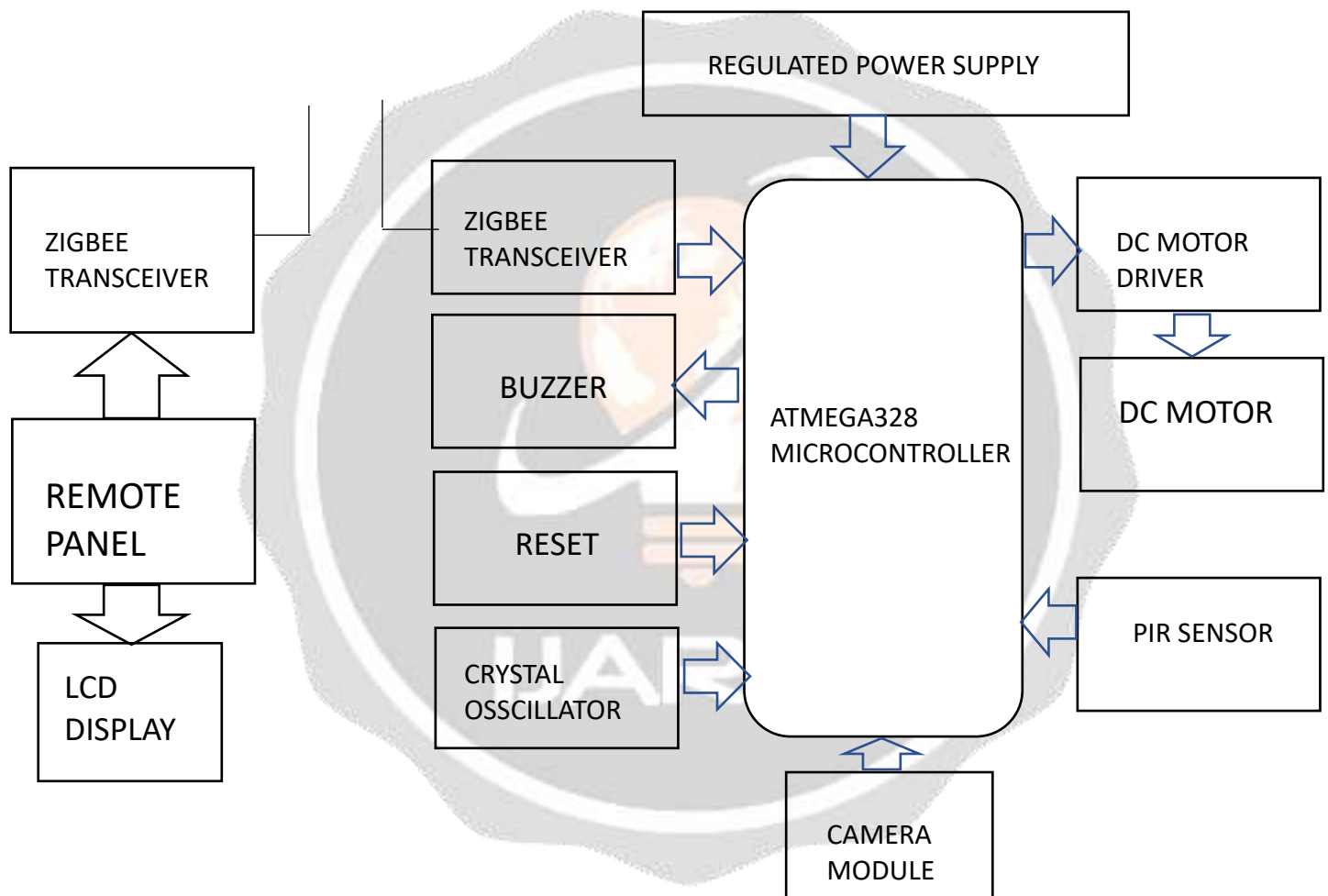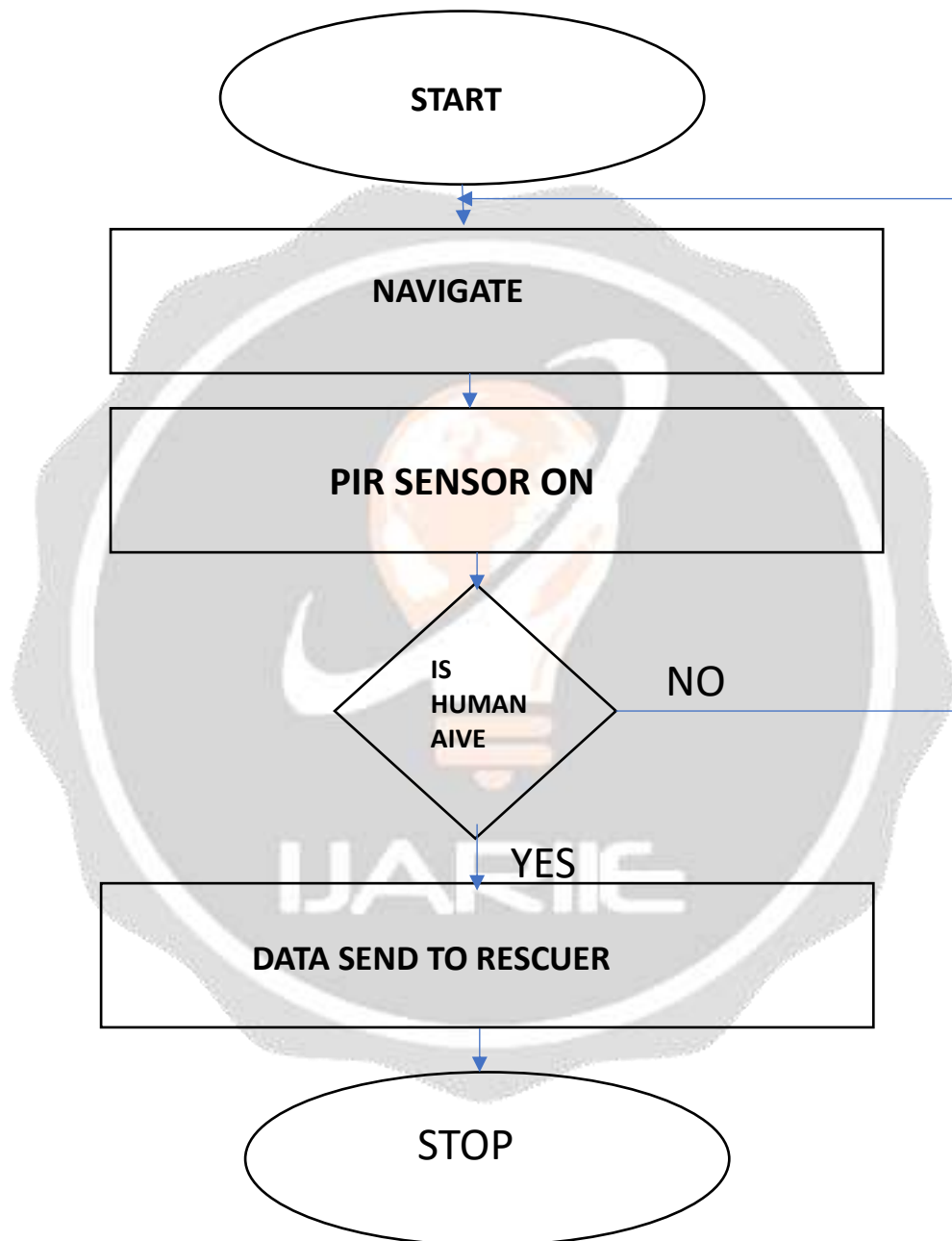

Fig. no.1 Block Diagram Of Alive Human Detection Robot

PROPOSED WORK FLOW:

Fig no 2. Flow Chart

WORKING OF THE PROPOSED MODEL:

1. **Microntroller:** The microcontroller ATMEGA 328 is high performance and low power 8 bit microcontroller. It will receive data from all working units process on it and make the result.

2. **PIR sensor:** Passive infrared sensor (PIR sensor) is an electronic sensor that measures infrared (IR) light radiating from objects in its field of view. They are most often used in PIR-based motion detectors. A PIR-based motion detector is used to sense movement of people, animals, or other objects.

3. **Camera module:** The camera module is use as a web camera and it is placed on the robot. By using this camera the video signal is transmitted to the receiver at control room. This camera module will transmit the video coverage of the paths and this path to be taken by the rescue team. For this purpose ,high range camera module is to be used to get good clarity and good coverage of area.

4. **Crystal oscillator:** A crystal oscillator is an electronic oscillator circuit that uses the mechanical resonance of a vibrating crystal of piezoelectric material to create an electrical signal with a very precise frequency. This frequency is commonly used to keep track of time to provide a stable clock signal for digital integrated circuits, and to stabilize frequencies for radio transmitters and receivers.

5. **Buzzer:** When the alive human body is detected it will blow.

6. **LCD Display:** On the display we are able to see the accurate position of the victim.

4.CONCLUSION

The purpose of the proposed system is to provide a cost effective system for rescue of human beings in war fields and disaster prone areas. The proposed system uses a low cost sensor which is easily available. It is impossible for an individual to visit the war fields or disaster prone area. So, in such situations, the proposed system can be useful.

5.ACKNOWLEDGEMENT

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