



## AUTONOMOUS HUMAN DETECTING ROBOT BY USING WIRELESS TECHNOLOGY

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### ABSTRACT:

The main aim of this project is to sight the individual by employing a wireless remote controlled automaton, that have the sensors that detects the presence of the individual and indicates the presence to user. because it could be a wireless automaton it will be simply mobilized and might be controlled. this could be accustomed sight terrorists/thief within the building. RF Communication ranges in between thirty kHz to three hundred GHz. RF communication works by making magnetic attraction waves at a supply and having the ability to select up those magnetic attraction waves at a specific destination. These magnetic attraction waves travel through the air at close to the speed of sunshine. The wavelength of Associate in Nursing magnetic attraction signal is reciprocally proportional to the frequency i.e., the upper the frequency, the shorter the wavelength. during this project we have a tendency to use small controller, that is programmed to manage the input and output modules interfaced to that. The controller makes America e of a PIR based mostly input detector to sense the individual and provides us Associate in Nursing alert indication. The dominant device of the complete system could be a Microcontroller to that RF receiver, PIR detector and DC motors ar interfaced. The management|remote|device} has control buttons interfaced to RF transmitter. Whenever a button is ironed, the information associated with that button are going to be transmitted through RF transmitter. This knowledge are going to be received by RF receiver and is fed to the Microcontroller. The Microcontroller processes this knowledge and acts consequently on automaton motors. PIR detector is interfaced to the Microcontroller that unendingly monitors human presence and intimates to the controller. The controller alerts through Buzzer if human presence is gift. The Microcontroller is programmed exploitation Embedded C language.

**Keywords:** Autonomous mobile robot, Mobile Robot, Motion detection, Rescue, Robotics, ultrasonic sensor, Urban Search and Rescue.

## 1. INTRODUCTION:

Disasters will disrupt economic and social balance of the society. owing to high rise buildings and different man made structures urban and industrial areas is thought-about to be additional at risk of disasters. These disasters is classified into natural and human induced disasters. Natural disasters embody floods, storms, cyclones, bushfires and earthquakes wherever as besides natural disasters, the urban surroundings is susceptible to human induced disasters like transportation accidents, industrial accidents and major fires. Through out such calamities, particularly disasters, so as to forestall loss of life and property numerous essential services (like fire place brigades, medical and paramedical personnel, police) are deployed. consistent with the sector of Urban Search and Rescue (USAR), the likelihood of saving a victim is high among the primary forty eight hours of the operation, after that, the likelihood becomes nearly zero. Generally, Rescue individuals cannot enter into some components / places of the war field or within the earth quake affected areas. All of those tasks are performed largely by human and trained dogs, usually in terribly dangerous and risky things [1]. The rescuer might become a victim World Health Organization has to be reclaimed. {this is|this is often|this will be} why since some years mobile robots are projected to assist them and to perform tasks that neither humans dogs nor existing tools can do. For this project, we are going to focus solely on robots which can add a disaster surroundings of manmade. The projected system uses a supersonic device so as to sight the existence of living humans and a cheap camera so

as to capture video of the scene as required. Having detected a signal of a living human, the supersonic device triggers a camera to capture a video of the scene. The simulated automaton is assumed to own the aptitude to work out its current location in time period, to wirelessly communicate with the rescue team, and to regionally store the standing and placement data concerning the treed victims just in case the wireless communications link is quickly disconnected. Traditionally, equipped robots featured plenty of problems: i) a awfully high communication value was incurred owing to the massive range of transmitted pictures to the operator. ii) over twenty fifth of the communications between Wireless automaton and therefore the management unit was extraordinarily clattering and thus was useless. This eventually crystal rectifier to a loss of communication between the robots and therefore the operator. As a result, the robots stopped operating whole. iii) a awfully high process value is additionally incurred by the Capturing, storing, and transmittal an outsized range of pictures. iv) Third, there was an eternal want for illumination owing to the dark nature of those environments. this needs a comparatively massive power offer, that isn't possible in such things.

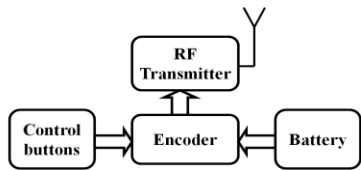
### I. RELATED WORK IN

this section, a short discussion of a number of the connected work is presented; that specialize in the used approach and its benefits and drawbacks. Remote Operated and Controlled Hexapod (ROACH): ROACH may be a six three-legged style that

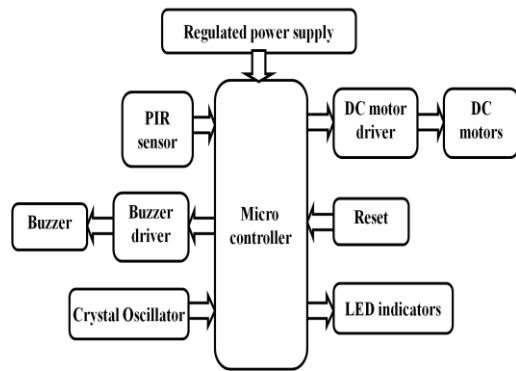
has important benefits in quality over wheeled and caterpillar-tracked styles. it's equipped with predefined walking gaits, cameras that transmit live audio and videos of the disaster web site, additionally as data regarding locations of objects with relation to the robot's position to the interface on the portable computer [2][3]. Kohga: University of national capital - the foremost difficult task for many of the USAR robots has been engaged on a rough parcel. specialised golems are designed for these kinds of environments like KOHGA the snake like robot.

**III.BLOCK DIAGRAM**

**Live Human being detection wireless remote controlled Robot (Useful for detection of terrorists hiding inside buildings)**  
**1. Transmitter**



**Live Human being detection wireless remote controlled Robot (Useful for detection of terrorists hiding inside buildings)**  
**2. Receiver**



Burion conferred a project that aims to supply a device suite for human detection for the USAR robots. This study evaluated many forms of devices for detective work humans like electrical

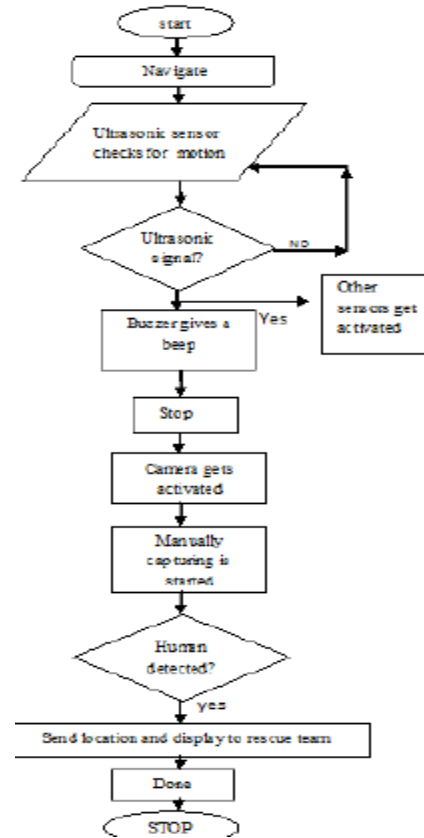
phenomenon sensor, USB camera, microphone, and IR camera. The electrical phenomenon device was wont to notice the bod radiation, however its limitation was its binary output. The USB camera was used for motion detection, however its limitation was its sensitivity to changes in intensity level. The electro-acoustic transducer was used for long length and high amplitude sound detection, however it absolutely was severely full of noise. Lastly, the IR camera was wont tonotice humans by their heat image, however it absolutely was full of different close hot objects. the most plan was to notice a modification within the image scene by checking the values of the pixels. many pictures for the scene were nonheritable and ablated from one another to get if a motion has occurred. The used technique was fairly economical in detective work the victims. However, the mechanism wasn't absolutely autonomous and wasenthusiastic about the operator. Greer, Kerrow, & Abrantes 2002, pictured a radical understanding of the urban disaster setting Associate in Nursing an appreciation for ancient search and rescue techniques ar crucial todeciding the success of a hovering mechanism resolution. during this paper search and rescue setting is delineate, the applications of robots in urban search and rescue, an overview of robotic competitions in simulating a true rescue setting is delineate. a lot of are often learnt from the urban disasters mentioned during this paper. Bahadori presents Associate in Nursing analysis of techniques that are studied within the recent years for boddetection (HBD) via visual data. the main target of this work is on developing

image process routines for autonomous robots operational for detective work victims in rescue environments. The paper each discusses issues arising in bod detection from visual data and describes the ways that ar additional up to be applied during a rescue situation. Finally, some preliminary experiments for such ways in recognizing rescue victims ar according [4]. Pissokas describe the social impact of urban devastations has given rise to the sphere of Urban Search and Rescue artificial intelligence. The aim of this text is to gift our expertise and experimental results with varied sensors designed and developed.

**IV HARDWARE IMPLEMENTATION**

In order to simulate the mechanism, a laptop computer used T.V Tune Card in addition as liquid crystal {display|LCD|digital display |alphanumeric display} to display knowledge interfaced wirelessly.. A mechanism is supplied with following detectors and camera: i) A Bomb (Metal) sensor to sight the presence of suspected material in Rescue operations. ii) associate supersonic detector to sight human motion and obstacles are available in the means of mechanism [5]. iii) A Temperature and hearth detector to live temperatures and show them on LCD within the variety of 3 states High, Low and Medium. iv) A camera to record and show knowledge once detector trigger.

**V. FLOW CHART OF DEVELOPED SYSTEM**



**V. Hardware Implementation**

In order to simulate the mechanism, a portable computer used T.V Tune Card still as liquid crystal {display|LCD|digital display|alphanumeric display} to display information interfaced wirelessly to the mechanism. A mechanism is provided with following sensors and camera: i) A Bomb (Metal) sensing element to notice the presence of suspected material in Rescue operations. ii) Associate in Nursing unhearable sensing element to notice human motion and obstacles are available in the method of mechanism. iii) A Temperature and hearth sensing element to live temperatures and show them on alphanumeric display within the sort of 3 states High, Low and

Medium.

iv) A camera to record and show information once sensing element trigger.

## VI. SOFTWARE IMPLEMENTATION

When the inaudible sensing element detects an indication, the management program orders the camera to show the encompassing space. If a human is detected, the system sends its current location to the rescue team additionally to the monitor if desired [5]. Figure IV shows the multidimensional language of the system operation. The mechanism additionally encompasses a wireless RF Transmitter and sends the message to the Remote Location whenever it finds any alive human.

## VII. APPLICATIONS

- i) In military applications to discover the presence of creature.
- ii) In Rescue operations wherever human reach isn't doable.
- iii) In Medical applications to discover motion.
- iv) In Warfield affected areas, to discover the presence of bomb.

## VIII. CONCLUSION

The goal of this analysis was to supply an occasional price rescue mechanism for human detection in an exceedingly disaster surroundings. Though, the present Urban Search and Rescue Robots are equipped with numerous sensors, however the matter with them is that the price. The sensors employed in the event of this project are simply obtainable and price effective. During this paper, are placement technique

for detection extant humans in destructed environments victimisation simulated autonomous mechanism is projected. The mechanism uses 2 levels of sensing so as to realize higher price-effectiveness within the detection method in terms of the particular cost of apparatus, the process price, the communication price, the storage price, and also the power price. the primary level is Associate in Nursing unbearable detector that's used because the primary detector so as to observe the existence of living humans in an exceedingly scene. The second level may be a build form detector. This level uses inexpensive internet camera so as to verify the existence of somebody's form. The mechanism is assumed to be equipped with an easy Temperature and bomb detector so as to observe fireplace in Rescue state of affairs and suspected metal severally and a wireless communication link in order to speak with the rescue team whenever a necessity arises.

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