

# CHILD RESCUE SYSTEM IN OPEN BORE-WELL USING ARDUINO UNO

**\*Jeevitha G, \*Srinidhi Kulkarni, \*Patil Harish, <sup>1</sup>Siddheshwari S. Patil**

*\*VI Sem Students of Department of Electronics & Communication, Sandur Polytechnic, Yeshwantnagar, Karnataka (India)*

*<sup>1</sup>Lecturer, Department of Electronics and Communication, Sandur Polytechnic, Yeshwantnagar, Karnataka (India)*

\*\*\*

**Abstract-** In India, from the past few years, there have been several accidents of children happening due to falling into the abandoned bore-well which is left uncovered. Abandoned bore wells seem to be death pits for children. In such accidents normal rescue operations are very complicated because the process is time consuming, requires huge man-power etc. The aim of this project is to provide a better and reliable solution for this problem. This rescue system uses the high-tech electronics automatic system.

**Key word-** Open bore-well, Arduino uno,

## 1. Introduction

Water scarcity is a major problem faced by human society currently. After drying the bore wells people are not closing them. There is a risk that children or animals fall down into the bore well. The depth and the diameter of the bore-well is the main obstacle to rescue the child safely. A small delay in rescue system will take the life of the child or permanent physically handicap. To solve this problem, we have designed our project "CHILD RESCUE SYSTEM IN OPEN BORE WELL". This project saves the child's life before it reaches the depth of the bore-well. To construct this project, we have used Arduino uno, board IR Sensor, GSM System etc.

## 2. Objective of Project

1. Child movement near to the open bore well will be detected and send notification to the authorized person.
2. Develop an automatic rescue system.

## 3. Block diagram & Working

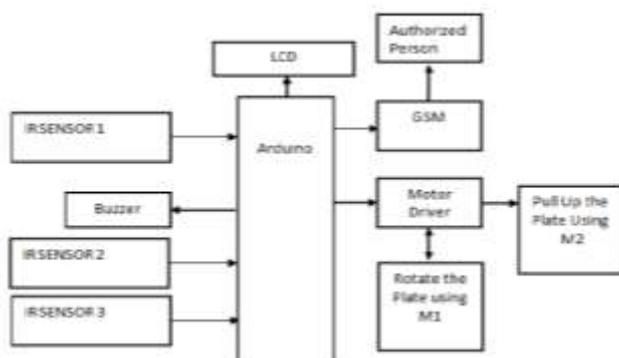


Figure 1. Block Diagram

Figure 1. shows the block diagram of the hardware set up. Here IR1 infrared sensor is placed near to the open bore-well. IR2 and IR3 infrared sensors are connected inside the bore well. If any movement is detected near to the bore well it will detect by the IR1 sensor and send information to the Arduino Uno controller. Controller will send the alert message through GSM module to the authorized person and display the same message on the LCD display. Here only we can save the life of the victim before felling down into the bore-well. Then also if child felled down into the bore-well then IR2 and IR3 sensor will sense the motion in-side the bore well and activate the dc motor driver. It gives long alarm. This DC motor driver controlling the two motors namely M1 and M2. M1 motor is used to rotate the vertical plate into the horizontal position to catch the child. And stop child further going into the dept. Motor M2 is used to pull up the rotated plate along with the child. After successfully saving the child reset button is provided to bring the system into the original position. This system requires the 5-volt AC voltage supply. That we are proving with the help of adaptor which converts 230-volt AC supply into the 5-volt DC voltage.

Project Photograph



Figure 2. Side View



Figure 3. Top View

List of the Hardware components used into this system-

1. Arduino Uno Board
2. Infrared Sensor
3. GSM module
4. Motor Driver
5. DC motor
6. Alarm
7. LCD Display
8. Consumables

#### 4. Software Requirements

Arduino uno board is programmable. Arduino IDE software is available to write the program. According to our requirements we have written the program and dumped into this board.

The flow chart of the program is as shown in the below figure

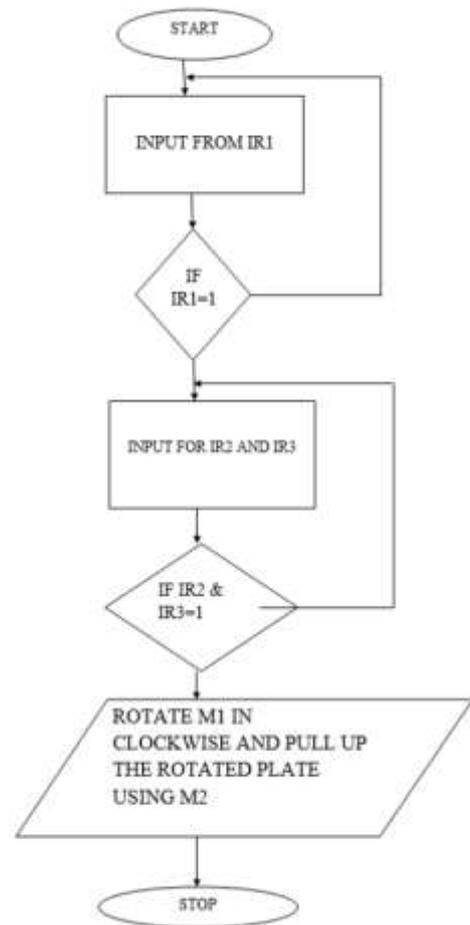


Figure 4. Flow Chart

#### 5. Advantages

1. The system provides a preventive approach toward the problem.
2. It's a quick method of rescuing the child.
3. Provide instant help to the child.
4. Manual operation is reduced.
5. Cost effective system.

#### 6. Limitation

1. If any cellular network problem occurs it can't send the message.
2. Our project is a protocol so it has some weight related issues.
3. Maintenance is required.

#### 7. Application

This system is mainly considering the rescue operation of the child who felled into open bore-well.

#### 8. Conclusion

Human life the valuable. "Child Rescue System in Open Bore-Well" project will help to the society to rescue the child who by mistake fell down into the open bore- well.

The system is very cost effective and response is very quick.

## 9. References

1. Palwinderkaur, Ravinderkaur, Gurpreetsingh "Pipeline Inspection and Bore well Research Robot" International Journal of Research in Engineering and Technology (IJRET)
2. Manish Raj, P. Chakraborty and G. C. Nandi "Rescue Robotics in bore well environmental" cornel University library.
3. B. Bharathi, B. Suchitha Samuel "Design and construction of Rescue robot and Pipeline Inspection using Zigbee".
4. John Jos Poterry "Robot for Bore -well Rescue" AmalJothi College of Engineering Vol. 10, Jun 2009
5. Gopinath, S. T. Devika, L. Manivannan and N. Suthanthira Vanitha "Rescue Child Form bore well using Embedded System" (2015)
6. Venmathi, E. Poorniyaamd, S. Sumathi "Borewell rescue Robot". International Journal of Computer Application (2015)
7. Data Sheet of the all components.



Mrs. Siddheshwari S. Patil. M. E. (2019) and M. B. A. (2013). Since last 6 years working as a lecturer in department of Electronics and Communication Engineering. Till date she is having 3 publications in international journals, 1 National conference.

## AUTHOR'S PROFILE



Jeevitha G, is pursuing her Diploma in Electronics & Communication Engineering, Sandur Polytechnic, Yeshwantnagar, Karnataka (India). She participated in National level Inter-polytechnic meet on Technical fest and Project exhibition "PRERANA EXPO - 2020"



Srinidhi Kulkarni, is pursuing his Diploma in Electronics & Communication Engineering, Sandur Polytechnic, Yeshwantnagar, Karnataka (India). He participated in National level Inter-polytechnic meet on Technical fest and Project exhibition "PRERANA EXPO - 2020"



Harish Patil, is pursuing his Diploma in Electronics & Communication Engineering, Sandur Polytechnic, Yeshwantnagar, Karnataka (India).