**SMART AND SAFE CHILD RESCUE SYSTEM**

**ABSTRACT:**

In India for past few days people are facing a distressed cruel situation like child have fell in the bore well and struck in the hole which is uncovered and getting trapped. Rescue of trapped child from bore well is very risky and difficult process when compared to the other accidents. It takes more than a day to save the child. Here, in this paper the child who is stuck inside the hole is to be saved by the clipper which pick and place the child with the help of remote controller. The clipper is left inside manually by the rope tied up at its hands. In this alternative scenario there will not be any requirements of digging hole parallel to the bore well. The child can be saved within a short period of time without any difficulties.

**INTRODUCTION**

Water scarcity is the major problem faced by human society currently. Recently many accidents of children falling in the open bore well have appeared. Very few children have been saved in such accidents. Many were died due to lack of oxygen and lack of time period they had taken to save the child. Even if rescued late, most victims were reportedly injured. This abandoned bore wells have become death pits and started taking many lives especially small children. The incident of losing lives trapped in bore well was highlighted in 2006 where a 5 year old child named Prince was rescued by Indian Army experts after a tough combat which lasted up to 49hrs. Report says starting from 2009-2016 more than 36 children fell into the bore well consequently. So saving a child from the bore well became a difficulty and a risky process. A small delay in the rescue process can lose his/her life. Even though the necessary oxygen, increasing temperature and humidity in such depth will be another risk for child life. In order to solve this kind of situation the rescue system is designed to save the child inside the bore well and the design is named as “SMART AND SAFE CHILD RESCUE SYSTEM” which is sent inside manually and holds back the trapped child systematically.

**Block Diagram:**

LCD

Arduino

IR SENSOR 1

GSM

UP DOWNN MOTOR

Motor Driving

Buzzer

IR SENSOR 2

DOOR OPEN CLOSE MOTOR

IR SENSOR 3

**Arduino :**

The Arduino Uno is a microcontroller board based on the ATmega328 ([datasheet](http://www.atmel.com/dyn/resources/prod_documents/doc8161.pdf)). It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a 16 MHz crystal oscillator, a USB connection, a power jack, an ICSP header, and a reset button. It contains everything needed to support the microcontroller; simply connect it to a computer with a USB cable or power it with a AC-to-DC adapter or battery to get started.

* 1.0 pinout: added SDA and SCL pins that are near to the AREF pin and two other new pins placed near to the RESET pin, the IOREF that allow the shields to adapt to the voltage provided from the board. In future, shields will be compatible both with the board that use the AVR, which operate with 5V and with the Arduino Due that operate with 3.3V. The second one is a not connected pin, that is reserved for future purposes.
* Stronger RESET circuit.

"Uno" means one in Italian and is named to mark the upcoming release of Arduino 1.0. The Uno and version 1.0 will be the reference versions of Arduino, moving forward. The Uno is the latest in a series of USB Arduino boards, and the reference model for the Arduino platform; for a comparison with previous versions, see the [index of Arduino boards](http://arduino.cc/en/Main/Boards)

**LCD (Liquid Crystal Display)**

LCD screen is an electronic display module and find a wide range of applications. A 16x2 LCD display is very basic module and is very commonly used in various devices and circuits. These modules are preferred over seven segments and other multi segment LEDs. The reasons being: LCDs are economical; easily programmable; have no limitation of displaying special & even custom characters (unlike in seven segments), animations and so on.

A 16x2 LCD means it can display 16 characters per line and there are 2 such lines. In this LCD each character is displayed in 5x7 pixel matrix. This LCD has two registers, namely, Command and Data.

**Power supply circuit**

Power supply is a reference to a source of electrical power. A device or system that supplies electrical or other types of energy to an output load or group of loads is called a power supply unit or PSU. In this project, a +5 V DC regulated power supply is derived from the power supply unit designed and implemented. The Figure shows the circuit diagram designed to get the +5 V DC regulated power supply for the project. A full-wave rectifier is a device that has two or more diodes arranged so that load current flows in the same direction during each half cycle of the ac supply.

**motor driver**

Generally, L293D motor driver can control two motor at one time or called is a dual H-Bridge motor driver. By using this IC, it can interface DC motor which can be controlled in both clockwise and counter clockwise direction

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**GSM Modem:**

A GSM modem is a wireless modem that works with a GSM wireless network. A wireless modem behaves like a dial-up modem. The main difference between them is that a dial-up modem sends and receives data through a fixed telephone line while a wireless modem sends and receives data through radio waves. Like a GSM mobile phone, a GSM modem requires a SIM card from a wireless carrier in order to operate.

It is a compact and portable terminal that can satisfy various data communication needs over GSM. It can be connected to a computer with the help of a standard RS232C serial port. SimadoGDT11(Matrix Simado GDT11 is a Fixed Cellular Terminal (FCT) for data applications. It is a compact and portable terminal that can satisfy various data communication needs over GSM. It can be connected to a computer with the help of a standard RS232C serial port. )offers features like Short Message Services (SMS), Data Services (sending and receiving data files), Fax Services and Web Browsing. Remote login and data file transfer are also supported. It is the perfect equipment for factory plants, resorts, dams and construction sites where wired connectivity is not available or not practicable. The Simado GDT11 is easy to set up. It finds its applications in IT companies, Banks and Financial Institutions, Logistic Companies, Service Providers, Remote Project Sites, Professionals, and such other business establishments.

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