

# Children Tracking System

Dr. K. Karnavel<sup>#1</sup>, Kalimuthu P<sup>#2</sup>, Karunakaran N<sup>#3</sup>, Kugan K<sup>#4</sup>

<sup>1</sup>Associate Professor, Department of Information Technology, Anand Institute of Higher Technology, Chennai.

<sup>2,3,4</sup>UG Student, Department of Information Technology, Anand Institute of Higher Technology, Chennai.

## Abstract

Recently, all over the world crime against children is increasing at higher rates and it is high time to offer safety support system for the children going to schools. This paper focuses on implementing children tracking system for every child attending school. The GPS and GSM module are used for tracking the children and the BPM sensor is used to sense the sudden raise of blood pressure to recognize emergency situation of the children.

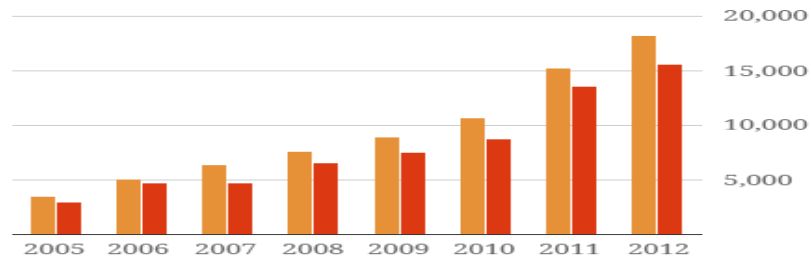
**Keyword** - GSM, GPS, Network Sensors

## I. INTRODUCTION

The crime against children is increasing at higher rate day to day. One of the most common crimes against children is kidnapping. Kidnapping is abducting and holding anybody captive, typically to obtain ransom.

### Kidnappings of children

■ Total no. of children kidnapped ■ No. of minor girls kidnapped



Scroll.in

Data: Open Government Data Platform India & National Crime Records Bureau

Fig1: History of Total no. of Children

## II. LITERATURE SURVEY

(Cassandra Dsouza et al), they proposed a system that uses RFID module along with GPS and GSM. The security issue and region coverage are major concerns. (Akash Moodbidri and Hamid Shahnasser), temperature sensor and UV sensor are used to monitor the emergency situation of children. The battery life is a major issue in this system. (Aditi Gupta et al), Geo-fencing technology is used for defining the boundary which is safer to the children. But the child has to carry the mobile phone.

Sometimes kidnappers hold the captives longer in order to demand more from relatives of the victim. This paper provides idea for the protection of children who are facing the safety issues due to increasing crimes. In this project for children safety the smart watch is proposed. Child protection is the protection of children from violence, exploitation, abuse and neglect. Child abduction or child theft is the unauthorized removal of a minor (a child under the age of legal adulthood) from the custody of the child's natural parents or legally appointed guardians. In today's world the security for child are provided by tracking the children location and information about situation are informed to parents. In order to deal high stakes situation the mike is used to record the data. The blood pressure of children is monitored and data are recorded and informed to the parents through mobile application.

(Xiaoli Wang et al), Cell ID is used for tracking the location of the children. But Cell ID is not efficient to track the accurate location. (Yoshiaki Kakuda et al), GPS and GSM are used to monitor the children. It is difficult to monitor the children when they move outside the boundary. (Maghade Satish et al), GPS used to track the location of the children but internet connection is must for tracking.

### III. SUMMARY

Nowadays even walking on the street in broad daylight may not be safe for children. With the increasing rate of kidnappings children are afraid to commute to school alone back alone. To ensure safety of children and increase their confidence a security system has been proposed in this paper. Many researchers are working in this area and have developed different technologies to help children. Some of the technologies have been outlined in this paper. Using the inspiration of these technologies the novel system proposed in this paper to reconfigure the existing system by adding new features there by making it more secure. This paper describes the basic design concepts and functionality along with the expected outcomes.

### IV. CONSTRUCTION OF THE PROPOSED SYSTEM

The architecture includes Arduino kit implemented with Global Positioning System (GPS), Global system for mobile communication(GSM) module and BPM. Arduino kit programmed by the arduino software to perform the actions. The command sent to the user is based on intimation received by him through the GSM modem alert a programmed message only if the input is driven low. The android application is developed by using the android studio and it connected to kit to receive the alert message. Panic button is used to record the voice message to solve the unwanted mess created. The security alert which is achieved in a way that on detection on inclusion the system allows automatic generation of SMS thus alerting the user against security risk.

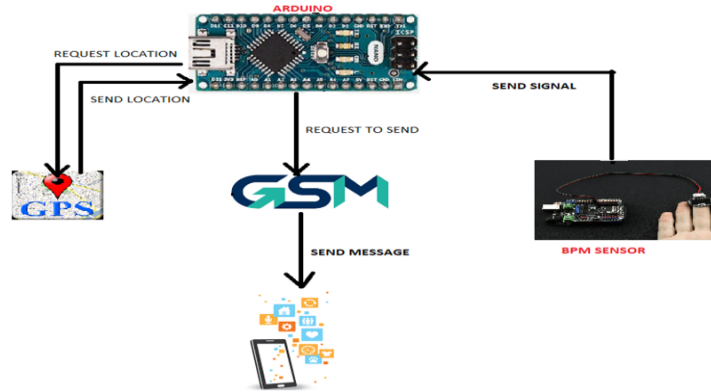


Fig2: Child Tracking System

### V. WORKING

The smart watch consist of Global Positioning System (GPS) , Global system for mobile communication(GSM) module and BPM sensor tied on children hand. Blood pressure is continuously monitored by Blood Pressure Monitor sensor. If there is any change in child's blood pressure, it is recognized and an alert message is send to their parents mobile. While playing the blood pressure raises and alert will be sent to the parents mobile. At that situation child long press the button, with the help of mike the child

voice message is recorded and sent to the parent mobile phone. Through this message the parent can know the children is safe. The blood pressure of the children are recorded at various situations are stored in the database and compared with current level of blood pressure. If the blood pressure varies from the normal bpm values, the emergency situation is recognized and an alert is sent to the parent mobile. If the watch is removed in any places other than home, it will initiate the alarm. If the children gets unconscious, the arduino detect the situation and send a signal to mike and initiate it to record the voices over the surrounding.

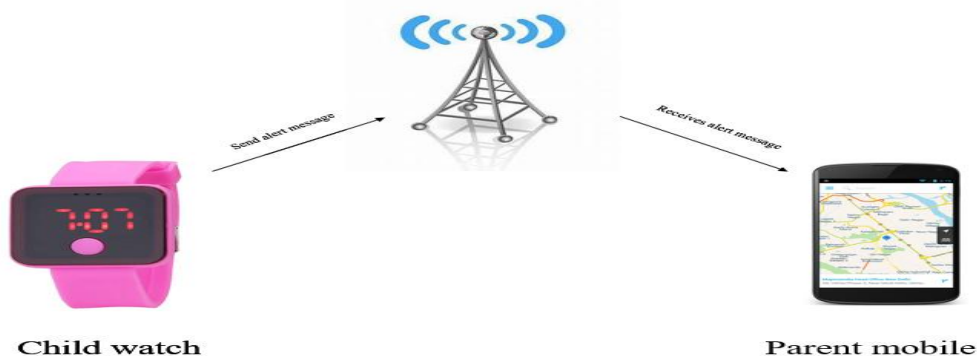


Fig3:working system of the Child Watch and Parent Mobile

## VI CONCLUSION

In this modern and fast moving world, human safety and security has become an important issue. In the past few years, crime against school going children has grown rapidly. This paper has offered a broad overview of some of the main approaches to child protection used internationally. As child tracking systems reflect cultural and institutional contexts that have developed over time, here the tracking and providing alert messages about location of the children who are out of sight.

This system can help the parents and the school authorities to monitor the children when they leave the school or they go missing.

## REFERENCES

- [1] Cassandra Dsouza, DhanashreeRane , Anjanette Raj, SupriyaMurkar and Namita Agarwal, "Design of Child Security System", International Conference for Convergence in Technology (I2CT) ,The Gateway Hotel, XION Complex, Wakad Road, Pune, India. Apr 06-08, 2018.
- [2] Akash Moodbidri and Hamid Shahnasser, "Child Safety Wearable Device", Department of Electrical and Computer Engineering, San Francisco State University , April 2017.
- [3] Aditi Gupta and VibhorHarit, "Child Safety & Tracking Management System By using GPS, Geo-Fencing & Android Application: An Analysis", Second International Conference on Computational Intelligence & Communication Technology, 2016.
- [4] Xiaoli Wang, Albert Kai-sun Wong and Yongping, "Mobility tracking using GPS, Wifi and cell ID", International Journal of Computer Science and Mobile Computing, April 2012.
- [5] Yoshiaki KAKUDA, Tomoyuki OHTA, Shinji INOUE, Eitaro KOHNO and Yusuke AKIYAMA, "Performance Improvement of Hiroshima City Children Tracking System by Correction of Wrong Registrations on School Routes", Graduate School of Information Sciences Hiroshima City University Japan,2009.
- [6] Maghade Satish, ChavhanNandlal and Gore Sandip, "Child Tracking System using Android phones", International Journal of Advanced Research in Computer Engineering & Technology (IJARCET) Volume 4 Issue 4, April 2015