SMART ID-CARD BASED CHILD SECURITY - DEVICE

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Abstract: **I**n a country like India, the chances of news featuring eve-teasing, kidnapping, child trafficking is 90% more than appearance of any other news feature .More than 50%cases of missing children have been reported from all over the country. Leading to repetition of more of such crimes even educational institution like school and college are not safe. Now the question arises, in this fast growing world of technology how can we embed the same to safeguard our children? Our smart wearable device i.e. ID CARD for little children is one small step to help parent locate their children with ease even if they are not with them. An SMS text enabled communication medium between parent and child IDCARD is established.

IndexTerms-SMART ID-CARD,RFID, GPS , GSM , TRACKING CAPABILITIES, GOOGLE MAPLINK , CHILD SAFTEY DEVICE(CSD)

I. INTRODUCTION

Crimes against children have seen an upsurge in the last few years. Keeping children safe has become a top priority for parents and school. Since children are at school for over 8 to 9 hours .This gps enabled I-CARD could be the best step taken by school authorities ,it is a very convenient and handy, this I-CARD sends regular updates of where your ward is, So even if they are not in front of your eyes you know they are safe. This Gps tracker sends you a notification when your child has left the school premises, their transit time to school and a notification when they are dropped off with driver details and bus number. The I-CARD unit consists of an RFID ID tag to automatically identify and track the tag attached to objects. The tag contains electronically stored information, an GPS to locate the object, an GSM module specifically for SMS system.

II. EXISTING SYSTEM

Many view wearable's as the next great frontier for technology advancement, creating connected and convenient lives wsssith the help of big data analytics.

1. **SAFE KIDS PAXIE BAND** is a highly versatile wearable device, this device also measures the temperature and heart beat of children.
2. **TINITELL** a Sweden based has released a wrist smart phone for kids it act as a simple phone with kids being able to make a call from selected list of number using voice recognition capabilities.
3. **FILIP 2 WRISTWATCHES** one unique aspect of the device is text featuring, allowing for two way messaging.
4. **GUARDIAN ANGEL** this works on radio proximity system where parent are alerted via an alarm.

Regardless of the fact that these devices do help one to locate the location but also can do many such things which are of no use to the age group of that kind hence making the device more power hungry. Also watches and band may get displaced by the children easily .

III. PROPOSED SYSTEM

The CSD helps the parents to get information about their child by just sending a normal text message or calling at that particular smart id number at any required time to get their child's current location. The System includes RFID or QR code for uniqueness to communicate between devices. The proposed system helps to bridge the gap between the parents and child by timely providing Child location, tracking and entry/exit of child from bus and school.

A. System Architecture

Overall System consists of a mobile application and child security devices along with smart Id cards. All these componentsare directly or indirectly connected and help each other to function properly by providing the location of the child.

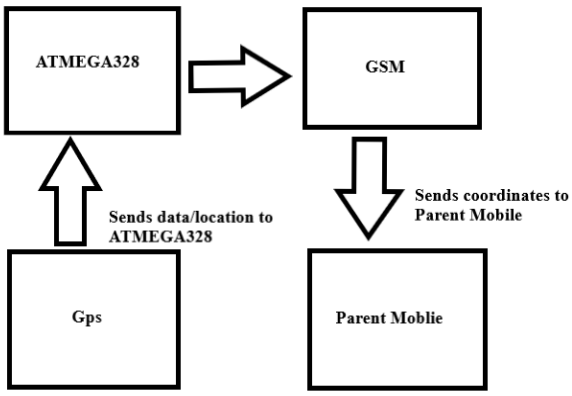
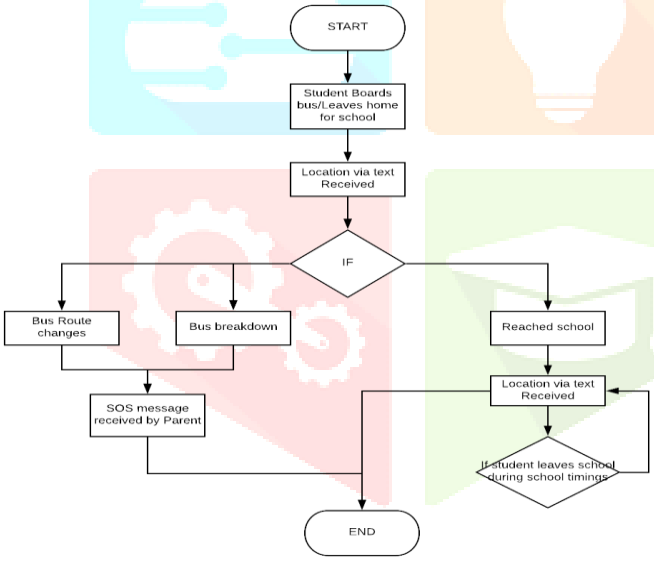


Fig1: Block Diagram

Flow Chart of the proposed system is given below-



B. Software Used

The coding for ATMEGA328 is done using c++/c which helps in initiating the UART protocols and GSM unit which is provided with the location data ie. Coordinates from the GPS unit, the same coding language is used to initiate the RFID tag reader which the bus unit uses for providing information related to entry/exit of child from bus & the Software used is Arduino IDE.

IV. HARDWARE SYSTEM DESIGN

1.**GPS Module-(G -TOP**)-

GPS is a multiple –satellite radio positioning system in which each GPS satellite transmit data that allows to precisely measure the distance from selected satellite the GPS(GLOBAL POSITIONING SYSTEM) is a space based satellite navigation system that provides location and time information in all weather condition.

2.**GSM Module(SIM 800C)-**

This units sends the location obtained from the gps module processed by the microcontroller to the parents mobile. A GSM modem is a wireless modem that works with a GSM wireless network. The Techniques GSM SMS is handled main role in this system. GSM SMS messaging can handle large number of transaction in a very short time

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3. **LCD DISPLAY (16 X 2**)- It is used to display the entry and exit of the child from the bus, present on the bus unit.

4. **RFID CARD AND READER (EM-81**)-

The EM-18 RFID Reader module operating at 125kHz is an inexpensive solution for your RFID based application. The Reader module comes with an on-chip antenna and can be powered up with a 5V power supply. Power-up the module and connect the transmit pin of the module to receive pin of your microcontroller. Show your card within the reading distance and the card number is thrown at the output.

5. **ATMEGA328-**

The Atmel picoPower ATmega328/P is a low-power CMOS 8-bit microcontroller based on the AVR enhanced RISC architecture. By executing powerful instructions in a single clock cycle, the ATmega328/P achieves throughputs close to 1MIPS per MHz

This empowers system designer to optimize the device for power consumption versus processing speed.

V. RESULTS

The parent can send a text/ make a call to a specific ID-NUMBER and the device will reply back with a text containing the real time location of child which upon tapping will provide direction to the child's location on google maps app.

VI. ACKNOWLEDGMENT

We sincerely express our immense thanks to our project guide Mrs. Divya Sharma & the teaching and non-teaching staff of Electronics and Communication Engineering Department of New Horizon College Of Engineering for their cooperation extended to us and our friends, who helped us directly or indirectly in the successful completion of this Project.

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