IMPLEMENTATION OF CHILDREN TRACKING SYSTEM USING MOBILE TERMINALS

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Abstract :

Recently all over the world in every 40 seconds child become missing or kidnapped.The increasing prevalence of children wandering has many parents very concerned. We have seen and read many stories about children who are kidnapped or not reaching homes. Most of the stories have had tragic endings. This paper focuses on implementing children tracking system for every child attending school.

With more children getting lost, Sen. Charles Schumer (NY) has proposed that the federal government provide funding for tracking devices for Autistic children so they do not go missing . These proposed tracking devices can be worn as wrist watches, anklets or in i-cards. The child module include PIC 18F45K22 microcontroller, Global positioning system (GPS), Global system for mobile communication (GSM) and receiver include parents mobile phone.

I. Introduction :

Designing a child tracking system to assure parents that their child is safe from suspicious actions and happy in school environment. The information of child being missed is sent to respective parents mobile, if they move beyond the coverage area. Also, when child wants to convey that they are in danger than they will press a panic button given on their school i-card.

Mobile terminals have wireless local area network(LAN) and Bluetooth device. It adopts bluetooth communication among mobile terminals in every group to collect information and delivers to respective server using wireless LAN.

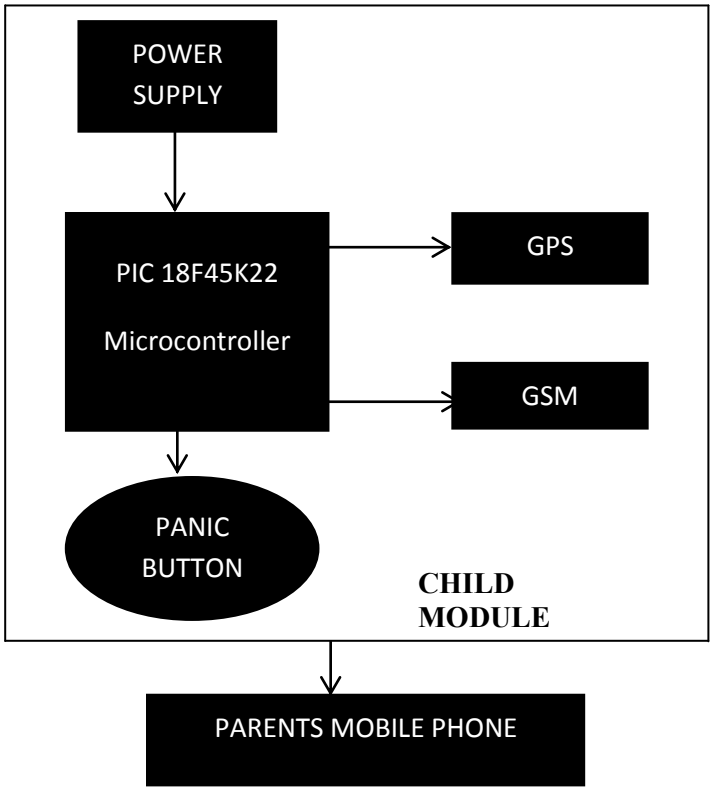

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Fig.1.block diagram of proposed plan

II. HARDWARE SYSTEM DESIGN

A. PIC IC(18F4SK22)

IC 18F4SK22 belongs to programmable interface controller family. It has high clocking speed and provides enhanced interfacing features with external devices. It needs low power of 5.5V for functioning thus suiting for this project. It's a 40 pin IC works on 64MHz frequency which is mobile friendly. It has four timers and have flash memory. The embedded microcontroller has the knowledge to give AT commands to initiate and send the child information message to mobile phone through GSM module.

B. GPS

GPS is a space based satellite navigation system that provides location and time information in all weather conditions. Consumes 30% less power than predecessors. It delivers top notch accuracy. Satellite transmits data that allow user to a precisely measure the distance from the selected to its antenna and to compute position, velocity and time parameters.

C. GSM (SIM300)

This module can accept any GSM network operator SIM card and act just like a mobile phone with its own unique phone number. The best part of using this modem is that its RS232 port to communicate and develop embedded applications. Like SMS control, Data transfer, alerts, sensors, reliable for 24x7 operation. Status is indicated by LED and its simple with low cost.

D. PANIC BUTTON

Whenever the child feels that he is in danger,he press the panic button. By pressing the panic button the message get forwarded toparents mobile and detect the location of child.

III SOFTWARE SYSTEMDESIGN

MPLAB IDE (V8.00)

MPLAB is a free integrated development environment for the development of embedded

applications on PIC and DSPIC microcontro llers, and is developed by Microchip Technology.

It included embedded C language

Which is used to activate the PIC IC and whole child module. It is used for writing coding. In this project the coding is written for GPS and GSM also, which gives the exact location of child module.

OUTPUT AND DESIGN IMPLEMENTATION

Child module with the help of which child press the panic button and PIC18F45K22 microcontroller gets on and send signal to GPS.

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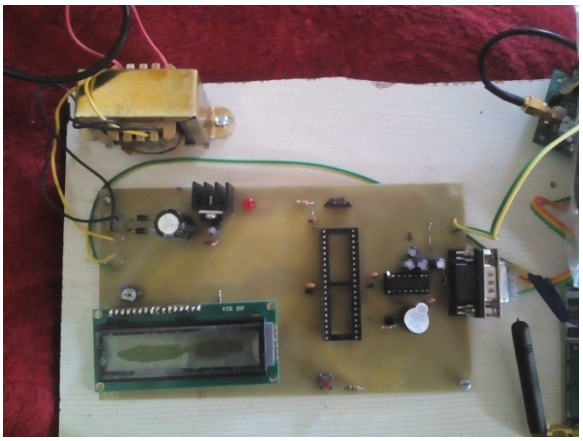

Fig. 2. Child module

When supply is given to GPS board(fig.3), by means of current sensation position of child get tracked and data get forwarded to microcontroller.

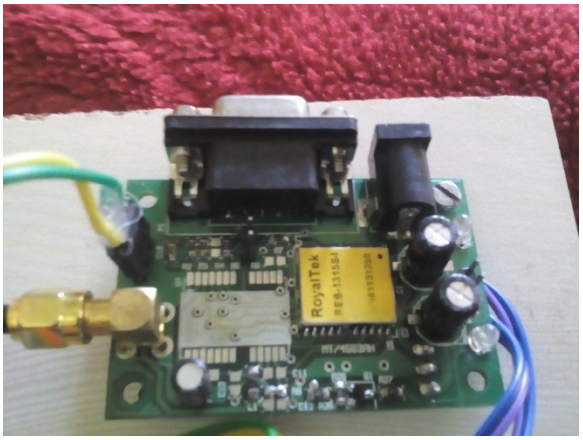

Fig. 3. GPS module

By sensing childs position through current, the GSM module(fig.4) receives longitude and latitudesignals and send it to parents mobile.

Fig. 4. GSM module

CONCLUSION

This project focuses on tracking a child's position and its location is sent to its parent mobile and it can be extended same to all childrens by reducing size of child module in the form of small chip , get fixed to the id card .To ensure the safety of child.

This project also focuses that, not only for children detection . It canused for girls, women safety which is very important nowadays.

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