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SMART CHILD TRACKING SYSTEM USING GSM AND GPS

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Abstract

Recently, every 40 seconds, a child goes missing or is abducted worldwide. Many parents are worried about the increased occurrence of children straying. We are forced to see and read many tales about children and students who are abducted or who do not return home. The majority of the tales end in tragedy. The purpose of this study is to discuss the implementation of a children monitoring location system for each kid that attends school. With an increase in the number of children going missing, Sen. Charles Schumer has recommended that the federal government subsidise monitoring devices for autistic children to ensure they do not go missing. These suggested tracking devices might be worn as wristwatches, anklets, or integrated into identification cards. The kid module is comprised of an Arm7 processor, a global positioning system, and a global system for mobile communication, while the receiver is comprised of the parent's mobile phone. It is really beneficial for women's safety.

INTRODUCTION

Children monitoring systems are extensively used across the globe to reassure parents that their children are protected from suspicious behaviour. In today's society, almost 80% of the population under the age of seven or eight possesses a smart phone [1]. The planned technology would also monitor a child's movements outside the house. This is for a variety of reasons, one of which being the incredible features and capabilities that modern smart phones, particularly those based on Android, provide. GPS has exceptional positioning capabilities, which may be leveraged to design innovative applications that assist in finding missing or lost children. This initiative is intended for use by parents and is focused at assisting in the recovery of missing or lost children. It capitalises on the fact that the majority of today's youngsters own a smart phone, which is ideal for this kind of circumstance. In this work, GPS is integrated with one of the fundamental services of a smart phone, GSM, more precisely SMS, to create a single system.

EXISTING SYSTEM

The system, created by Yuichiro MORI et al., makes advantage of the "Autonomous Clustering Technique" to manage groups of Android terminals tied to schoolchildren. Android devices include a wireless LAN and Bluetooth module. As a consequence, youngsters get little personalised attention. It provides a lower level of security [2]. Cyber Travel Tips did research [3] and discovered that in Malaysia, The majority of missing children fall into one of two groups. The first classification is disappearance, which involves fleeing from one's home. Additionally, a technique for monitoring children is being developed using mobile ad hoc networks. According to the approach proposed in [4], each parent cannot get group information on the child's whereabouts in a GPS or tag-based system. A self-configurable system for monitoring

offspring of the next generation. The Hiroshima City Children Tracking System is an ad hoc network-based safety assistance system for children. Field trials were undertaken in collaboration with a Hiroshima elementary school. The purpose of this work is to propose a new generation of children tracking system based on the experiences and results of the Hiroshima children tracking system field tests [5]. Existing technologies, on the other hand, are insufficient to prevent crimes against children and to assist parents, since it is difficult to collect data on children collectively.

SYSTEM DESIGN

Creating a kid monitoring system to reassure parents that their youngster is protected from questionable behaviour. If a kid is missing, the information is transmitted to the appropriate parent's mobile phone if they leave the service area. Additionally, if a youngster wishes to communicate that they are in danger, they will hit the panic button located on their school ID card. Internet access is available on mobile terminals. It accepts the child's message and forwards it to the parent's cell phone. This architecture consists of the following components:Power supply

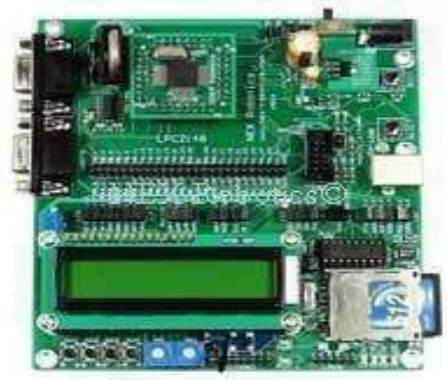
Arduino UNO KIT

Panic button

GPS

GSM

LPC 2148

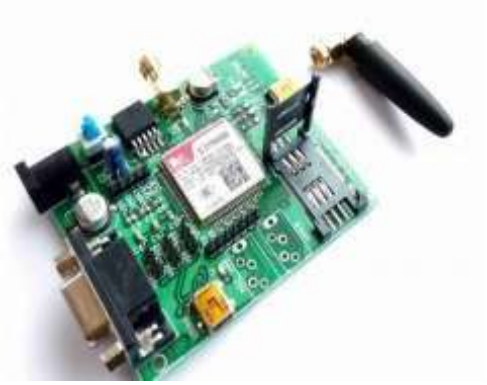


The ARM7TDMI core is the industry's most widely used 32-bit embedded RISC microprocessor. Optimized for cost and power- sensitive applications, the ARM7TDMI solution provides the low power consumption, small size and high

performance needed in portable, embedded applications.

The ARM7TDMI core is a general-purpose 32-bit microprocessor from the ARM family. The ARM series of microprocessors provides excellent performance at a low power consumption and a compact footprint. The ARM architecture is built on the ideas of Reduced Instruction Set Computing (RISC). The RISC instruction set and associated decoding process are much simpler than those used in Complex Instruction Set Computer (CISC) architectures. This simplicity results in the following:

GSM MODEM



GSM is a worldwide recognised standard for digital cellular communication. A GSM modem is a kind of wireless modem that communicates via a GSM network. GSM SMS techniques play a critical part in this system. GSM SMS messaging is capable of handling a significant volume of transactions in a relatively short period of time.

time. This single GSM connection is capable of processing hundreds of transactions.

GPS MODULE

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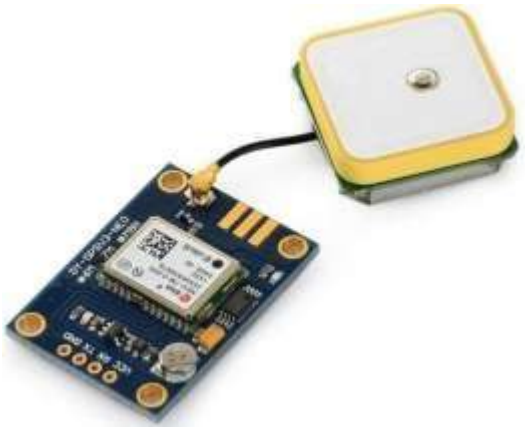


GPS is a multiple-satellite-based radio positioning system in which each GPS satellite broadcasts data that enables the chosen satellite's distance to be accurately measured. The Global Positioning System (GPS) is a satellite navigation system based in space that gives accurate position and timing information in all weather situations, anywhere on or near the globe.

PANIC BUTTON

This panic button may be used in conjunction with a hardware module. If the youngster presses the panic button, a message is sent to the parent's mobile phone.

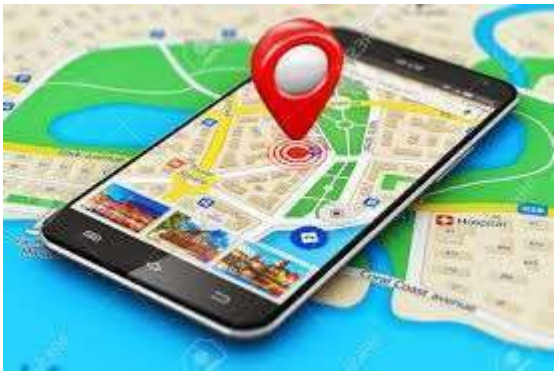
ADVANTAGES

1. Because the youngster did not have the expertise to update his position on the map at the time, the application automatically handles location requests without user intervention. 2. When internet access is unavailable, that programme utilises SMS. The frameworknecessitates location and telecommunications services. 3. It may be used inside without GPS satellite connection. At that point, it may make advantage of network-based location services.

V.SOFTWARE TOOLS

ARDUINO IDE

RESULT



Location in Google maps

VII.CONCLUSIONAND FUTURESCOPE

At the completion of the experiment, it was determined that it will be used to locate missing children. This project was provided detailed information on kid tracking systems via the use of two components, namely GPS and GSM telephony services. Finally, this application is still in need of improvement. Emergency notifications and similar features may be added to the system to improve it. The suggested system will be further developed in further study.

REFERENCES

[1] Atsushi Ito, Yoshiaki Kakuda, Tomoyuki Ohta, and Shinji Inoue, "A new safety assistance system for children on school routes utilising mobile ad hoc networks," forthcoming in IEICE Transactions on Communications, vol.E94-B, no.1.

[2] C.R. Lin and M. Gerla, "Distributed clustering for adhoc networks," IEEE Journal on Selected Areas of Common Interest, Vol.15, no.7, pp. 1265–1275, 1997.

[3] Eitaro Kohno, Tomoyuki Ohta, and Yoshiaki Kakuda, "Secure decentralised data transmission against node capture attacks in wireless sensor networks," Proceedings of the

9th IEEE International Symposium on Autonomous Decentralized Systems (ISADS2009), Athens, Greece, pp. 35-40, 2009.

[4] W.C.M. Hsiao and S.K.J. Chang, "The Optimal Location Update Strategy for a Cellular Network-Based Traffic Information System," 2006 Intelligent Transportation Systems conference.

[5] H. Taniguchi, M. Inoue, T. Masuzawa, and H. Fujiwara, " Clustering method in ad-hoc networks," IEICE Trans., Inform. & Syst. (Japanese Edition), Vol. J84-D-I, no. 2, pp. 127–135, February 2001.

[6] J.Saranya, J.Selvakumar, "Implementation of a Children Tracking System on Android Mobile Terminals," International Conference on Communication and Signal Processing, India, April 3-5, 2013.

[7] Lijun Jiang, Lim Nam Hoe, and Lay Leong Loon, "An Integrated UWB and GPS Location Sensing System in a Hospital Setting,"

[8] proposed at the 2010 IEEE 5th Industrial Electronics and Applications Conference is.

[9] [10] Otsason, A. Varshavsky, A. LaMarca, and E. D. Lara, "Accurate GSM Indore Location," in Proceedings of the Seventh International Conference on Ubiquitous Computing (Ubi-Comp 2005), Tokyo, Japan, pp. 141–158.

[10] [11] Peng Wang, Zhiwen Zhao, Chongbin Xu, Zushun Wu, and Yi Luo presented "Design and Implementation of a Low-Power Tracking System Using a GPSGPRS Module" at the 2010 IEEE 5th Industrial Electronics and Applications Conference.

[11] [12] Tomoyuki Ohta, Shinji Inoue, Yoshiaki Kakuda, and Kenji Ishida, "An adaptive multi-hop clustering algorithm for ad hoc networks with high mobility," IEICE Transactions on Fundamentals of Electronics, Communications, and Computer Sciences, vol.E86-A, no.7, pp.1689-1697, 2003.

[12] [13] Yuichiro MORI, Hideharu KOJIMA, Eitaro KOHNO, Shinji INOUE, Tomoyuki OHTA, and Yoshiaki KAKUDA, "A Self-Configurable New Generation Children Tracking System Based on Mobile Ad Hoc Networks Composed of Android Mobile Terminals," 2011 tenth International symposium on Autonomous decentralised systems. Linear Networks and Systems, W.-K. Chen (Bookstyle)

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