

“WHY WOULD YOU NOT WANT TO KNOW WHERE YOUR CHILDREN ARE 24 / 7?”

Tracking Children by using Implanted Global Positioning Systems

By Lt. Joe Garza

Imagine sitting at work and you get a phone call from the babysitter who tells you that your child did not return home from school. The school has been called and they say the child left by school bus; the driver reports dropping your child off at the regular site. School friends are called and say your child was on the bus with them and nothing was out of the ordinary. One child, though, says she saw your child talking with “a man in a car” after leaving the bus. Panic strikes as your worst fears may have come true; your child has been abducted.

As with any other abduction, the authorities immediately begin an investigation. Amber Alerts are put into effect, “be on the lookouts” are sent to police agencies and the news media is alerted. Everything is put into action and the wait begins for the parent. The wait is unbearable, though, and you blame yourself for not teaching your children better. According to FBI statistics, your child will be returned to you usually within a short time, but in what condition? According to those statistics, most children are usually not injured by their abductors (often, the abductor is a non-custodial parent), but they will have suffered a mental trauma that is just as devastating.



Let's take the same scenario and imagine law enforcement receiving a phone call of an abducted child. This time, however, the child had been implanted with a Global Positioning Satellite (GPS) tracking device. Within minutes of the call, authorities are able to contact a central monitoring site and obtain the exact location of your child. They are able to notify the appropriate law enforcement agency, which moves to locate your child based on longitude and latitude given by the monitoring center. Within a short time, he or she is found and reunited with their family and at best has suffered minor mental trauma or physical trauma. In this, as with many other instances, the perpetrator is apprehended, thus eliminating the threat of future crimes.

GPS might change the landscape forever, and allow parents and the police a decisive tool in the battle to protect innocent children.

GLOBAL POSITIONING SATELLITE IMPLANTS

For decades, law enforcement has been utilizing innovative technologies to reduce crime and the amount of time they spend on certain investigations. Technological advances have included computer aided dispatch, computers in police vehicles and GPS for police to monitor the location of officers during their tour of duty. This is not intended to infringe on an officer's right to privacy, but to ensure those concerned know where they are in case of an emergency. So, if we can use technology to monitor our police officer's locations while on duty, we certainly should consider monitoring the location of our children to assist in their safety in much the same way. Let's look at a short account of how dramatically this technology might work.

Five year old Samantha Bree Runnion was kidnapped on July 15, 2002 from her front yard in Stanton, California. At the time of her kidnapping, Samantha was playing with a friend when a man approached them and asked them if they had seen his dog.



After speaking with him for a short time, the man grabbed Samantha and pulled her into his car. Her friend told Samantha's Grandmother what had transpired, and the manhunt for five-year old Samantha began. The next day, the unclothed body of a small girl was found along a rural highway in neighboring Riverside County. On July 17, 2002 an autopsy confirmed the victim was, in fact, Samantha Bree

Runnion. The autopsy also confirmed Samantha had been assaulted, suffered physical trauma, and had been choked to death. According to the evidence, Samantha's abductor spent several hours with her before her death. Although the police and FBI arrested a suspect within 72 hours of the crime, nothing could restore Samantha to her family. Alejandro Avila was convicted in April 2005 of the crimes against Samantha and sentenced to death. By the time of Avila's sentencing, Samantha would have been ten years old. Could this brutal loss of life have been prevented or avoided? As parents we teach our children about talking to strangers, what to do when they are approached by a stranger, how to dial 911 in case



of an emergency, but is this enough. Imagine if Samantha had been “wired” with GPS being monitored by security professionals. In this case, as in many others, a tragedy would have been averted. Avila would have been quickly captured, and Samantha would have put this tragic incident behind her. Can we afford not to use readily available technology to help protect our children?

GLOBAL POSITIONING SATELLITE IN TODAY’S WORLD

The use of Global Positioning Satellite in America has existed for many years. Every time you purchase a “loaded” vehicle it is normally equipped with some type of GPS equipment. For a small price, you can receive a years worth of service and have the peace of mind that if you get lost, they will find you; if you lose your car, they will find it; if you need help in an emergency, they will find you and get you that assistance. Why not use an extension of the same concept to be able to locate children? Certainly, some may view this as another effort by the government to intrude on their private lives. But the fact, anyone with GPS mapping, interactive monitoring of their car’s locale through the manufacturer or a cell phone is already susceptible to similar monitoring through press of a button.

The effectiveness of GPS in business has proven to be invaluable. Business has been able to transform the GPS system to provide up-to-the-minute information on the whereabouts of products being shipped or trucks carrying those goods. If government and parents across the country can see this as a powerful tool to prevent abductions, the Global Positioning Satellite technology is readily available. However, for this to happen government will need to gain the trust and confidence of the parents and law enforcement must have the support of the parents as well as their confidence.

If a microchip with a miniature digital transceiver is implanted into a person, they can be followed around the earth everywhere they go via satellites and computer networks. As a society, we have embraced the technology to track parolees and even sexual offenders. In California, since June 2005, approximately 417 High Risk Sex Offenders have been tracked by use of Global Positioning Satellites in a pilot program, although not implanted it gives us an idea of how GPS technology is being used to track people. This program was a result of Assembly Bill 1442 and Senate Bill 881, which

authorized the California Department of Corrections to track a class of offenders who currently qualify for extended parole periods. Using Global Positioning Satellites, authorities have been able to obtain information revealing the parolee's proximity to any locale where children might congregate (such as a school or park), or if they were in the company of another registered offender.

With this GPS-enabled monitoring program, law enforcement officers have been able to detect, investigate, and apprehend a number of offenders in violation of the terms of their parole and involved in committing crimes against children. As a result, more than 45 of these parolees were charged with parole violations as a result of violating some portion of their special conditions of parole. In a statement made by Amro Albanna, President of the Riverside based Applied Digital Solutions Operations center, "this monitoring system is a cost-effective community-service program. The system is designed not only to monitor the location of parolees, but also to provide the appropriate authorities with an advanced warning when violations occur. We hope this program will serve as a model for other counties in the state."¹ Although these devices are not implanted, they show an emerging technology that could also be used in the tracking of children or others.

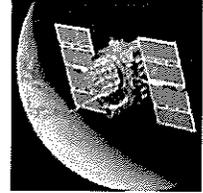
Other examples of GPS being part of our society include the "Anticipated Wanders" product. In 2001, Applied Digital Solutions began Beta testing on what they called "Anticipated Wanderers" product. Although not implantable, this device was being designed "for the remote monitoring of persons with Alzheimer's disease, Autism and other diminished cognitive disabilities".² Applied Digital Solutions, a Minnesota based company, has been in the testing and production stages of a microchip product called "Verichip" and "Digital Angel". The "Verichip" device is an implantable identification device with the potential to be used for security, financial, health, identification or other reasons. The newer product, "Digital Angel", will allow for the same technology that its predecessors allows for, but will include integrated wireless Internet technology with global positioning to transmit information directly to the Internet.

¹ Amro Albanna, President, Operations Center for Digital Angel Corporation, press release, 07 Nov. 2001.

² Hall, Len, "[Digital Angel to Enter Beta Test Phase on Highly Anticipated Wanderers Product](http://www.digitalangelcorp.com/about_pressreleases.asp?RELEASE_ID=42)" Aug. 2001. [online] available at http://www.digitalangelcorp.com/about_pressreleases.asp?RELEASE_ID=42

THE HISTORY OF GLOBAL POSITIONING SATELLITE

So if a child is implanted with a “chip” and they are able to be tracked, how does it work? The Global Positioning Satellite system was designed, and is operated and maintained, by the United States Department of Defense. It used to be known as the Navstar Global Positioning System and was first brainstormed at the Pentagon in 1973 as they were looking for a satellite system that was error-proof. In 1978, the first operational Global Positioning Satellite was launched. By the mid-1990s, the system was fully operational with 24 satellites. These satellites orbit the earth at an altitude of 11,000 statute miles and provide very precise, worldwide positioning and navigation information 24-hours a day, in any weather, to devices designed to receive and display this information.³



GPS systems have gained wide acceptance among sailors, arctic explorers, surveyors and others for many years. They have recently become small and affordable enough to use in personal navigation. Global Positioning Satellite systems are very commonplace in today's society, used commercially in vehicles, cellular phones, and products being shipped nationally and internationally.

Global Positioning Satellites transmit information to a user in simple numbers. Calculations are computed by computers which in turn give the user coordinates. Global Positioning Satellite is actually a constellation of 27 Earth-orbiting satellites (24 in operation and 3 in case one fails). Each of these satellites circles the Earth at about 12,000 miles and makes two complete rotations every day. The orbits are arranged so that at anytime, anywhere on the Earth, there are at least four satellites “visible” in the sky. A Global Positioning Satellite receiver's job is to locate four or more of these satellites, figure out the distance to each, and use this information to calculate its own location. When you measure the distance to four satellites, you can draw lines that intersect all at one point. Once the receiver makes this calculation, it can tell you the latitude, longitude, and altitude of its current position. When one considers being able to locate any person rather quickly, GPS is the ideal platform from which to launch a program intended to protect abducted kids.

³ “The Global Positioning System: The Role of Atomic Clocks”, (January 2003), National Academy of Sciences, [online] available at <http://www.beyonddiscovery.org/content/view.page.asp?l=464>

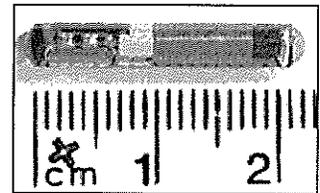
PREVENTING AND INVESTIGATING CHILD ABDUCTIONS

Unfortunately, the abduction of children continues to be a pervasive crime throughout the United States today. Law enforcement officials have feverishly tried to educate the public on the importance of knowing where our children are at all times, and how to protect them from stranger abductions and even parental abductions. Statistics, however, still show that children continue to be a threat to being abducted either by a stranger or a parent.

According to a report published by the U.S. Department of Justice in 2002⁴ it showed that abductions by a non-family member totaled 58,200. Of those non-family abductions a total of 19% were younger than 11 years old, 62% of those abducted were gone anywhere from 3 to 24 hours, and 37% of the total abductions were by strangers. Family abductions were even more startling. In 2002 the same report indicated that in 1999 there were a total of 203,900 abductions by a family member. Of those abductions 44% were younger than 6 years old, 46% were gone less than 1 week, and 78% of those abductions were the result of the child's parent.

So how do we prevent these abductions from occurring? One emerging issue is to use available technologies to implant a "tracking chip" subcutaneously into children so they can be located in the event they are lost or abducted.

The "chip" is an inert, encapsulated microchip that is energized and transmits its information when activated. Because the chip is so small (about the size of a pen point), it



is virtually undetectable and practically indestructible once inserted under the skin. The chip has a special polyethylene sheath that helps the skin bond to it – so it stays in place. Since the chip has no battery, there are no chemicals to worry about, and the chip never "runs down"; its expected life is up to 20 years. The device is powered electromechanically through the movement of muscles, and it can be activated either by the "wearer" or by the monitoring facility. The chip is inserted just under the arm in the fleshy part of your upper arm. The inserter and chip are pre-assembled and sterilized

⁴ Flores, J. Robert, National Incidence Studies of Missing, Abducted, Runaway, and Thrown away Children, United States Department of Justice, Office of Juvenile Justice and Delinquency Prevention, October 2002.

for safety. The inserter is thrown away afterwards. There is very little discomfort – less than “getting a shot”.⁵

AVAILABLE TECHNOLOGIES IN USE TODAY

The thought of having a “chip” implanted into the body of a child may be the furthest thing from the mind of a parent. Some companies have products that look like pagers, watches, or cellular phones that can be used to track the children. These tools are becoming even more popular since it provides a sense of security in today’s world of Amber Alerts, terrorist warnings, and online predators. Let’s look at three options available today to use Global Positioning Satellite to locate a child:

“*Wherify*” is a device that looks like a watch, and can be locked on your child’s wrist. When you purchase the device and attach it to your child, you call into a private company to activate the system. When activated, you are only keystrokes away from knowing where your child is by either accessing the Web site or by dialing an 800 number. If the device is removed without the appropriate key, an alarm will sound at the emergency center. The device is also equipped with an emergency button that will call 911. In an article written by BBC News Columnist Clare Murphy, one school secretary and a mother said of a recent test of the system, “It gave me peace of mind and made me feel closer to him. It made me feel more involved with what he was doing.”⁶

“*SIDSA Personal Locator*” is another device that is the size of a deck of playing cards which can be carried in a pocket or in a purse. Currently this device is being used by hospitals that have patients that suffer from Alzheimer. This device can be monitored by a central monitoring center and can set boundaries for the person wearing the device. If the person wanders outside the set boundaries, an alert is sounded and the person can be retrieved.

“*ULocate*”, is a phone that allows parents to track the location of their child’s phone, and allows them to see their child’s exact location via a Mapquest map. Special programming can be done so that it alerts you when your child arrives at certain locations such as school, home, or sporting center or even if they leave the designated

⁵ Verichip Personal Identification System, Frequently Asked Questions, Applied Digital Corporation, [online] available at <http://www.adsx.com/faq/verichipfaq.html>.

⁶ Tracking Down Your Child, BBC News, 03, October 28, <http://newsvote.bbc.co.uk>

area. This technology takes advantage of cellular phones that establish and transmit latitude and longitude using government's Global Positioning Systems.

Unfortunately, these three systems are all external devices, and thus susceptible to being lost, misplaced or quickly removed by an abductor. With an implantable chip neither a child nor the parent would have to worry about those issues in addition an implantable chip would not be transferable nor would it require batteries to be changed or be damaged by children playing.

CHALLENGES TO "CHIP" TECHNOLOGIES

With any type of technology, however, there are challenges. One may include the civil liberties unions deciding that this type of technology may infringe on a persons right to be "free". "The law on surveillance begins with the Fourth Amendment to the Constitution, which states clearly that Americans' privacy may not be invaded without a warrant based on probable cause", according to an article written by the ACLU on the monitoring of phone calls and e-mails⁷. Although we do require a warrant to conduct a search we do not need to obtain a warrant if we can justify that our actions are based on exigent circumstances. The abduction of a child would be considered, in my opinion, "exigent circumstances".

As technology develops and companies advertise their products, those from whom we are trying to protect our children will become even smarter. If a kidnapper believes, based on his understanding of technology, that a child is wearing a device that enables them to be tracked, will they allow them to keep it? Cellular phones, pagers, watches, etc could be removed and eventually put into a metal box that will block the signal, hence allowing them to be "invisible" again. Or a potential abductor can merely remove those items at the location where the abduction occurred, leaving them at the location where the child is supposed to be, thus giving the person viewing the device the belief that the wearer is still where they are supposed to be. So then why implant? If a device is implanted into the body, the likelihood of an abductor knowing that a child is implanted with a Global Positioning Satellite is diminished.

⁷ NSA Spying on Americans Is Illegal, <http://www.aclu.org/privacy/spying/23279res20051229.html>, December 2005

"GIVE ME LIBERTY OR GIVE ME GPS"



Technology does have its negative issues and concerns and our liberties are no different. Benjamin Franklin once said, "They that can give up essential liberty to obtain a little temporary safety deserve neither liberty nor safety." However, Thomas Jefferson once wrote, "The natural progress of things is for liberty to yield and government to gain ground." For centuries our government has debated the questions of liberty and how much should we have and who should have it.

In an article written in 2004 in CNET News.com, a proponent of Global Positioning Satellite technology whose husband travels to Puerto Rico indicated, "I think safeguarding his safety doesn't necessarily violate his privacy, and if I am made to choose between keeping him safe versus keeping him private, I'd rather keep him safe and then change private data such as credit cards, bank accounts, etc., after". This is just one example of how people are not worried as much about privacy as they are about safety.

With the implantation of children with Global Positioning Satellite devices, there will be an increase of opposition. Dr. Ellen McGhee, Director of the Long Island Center for Ethics at Long Island University writes: "A paramount worry is who will control the technology...the prospects for sinister invasions of liberty and privacy are alarming."⁸ Children do have privacy rights just like adults; however, their constitutional rights may be limited because of their status in society. In 1979, the Supreme Court said in a case dealing with abortion that, "We have recognized three reasons justifying the conclusion that the constitutional rights of children cannot be equated with those of adults; the peculiar vulnerability of children; their inability to make critical decisions in an informed, mature manner; and the importance of the parental role in child rearing."⁹ Over the years, laws have been implemented throughout this country that gives children certain rights such as the right to have an abortion, which raises the question of morality and Internet privacy protection which involves privacy for a child when on the Internet which

⁸ Post-911 Security Fears Usher In Subdermal Chips, WorldNet Daily, 04 Feb. 2002 <http://www.worldnetdaily.com/news>

⁹ Bellotti v. Baird, 443 U.S. 622 (1979) <http://www.vlex.us/caselaw/U-S-Supreme-Court/Bellotti-v-Baird-443-U-S-622-1979>

deals with the issue of privacy. Although these issues deal with children's rights they do not relate to the issue of personal safety and who could decide that for them.

Advanced technology enhances a police officer's ability to fight crime, but as with any new technology, presents constitutional issues. Several cases heard by the United States Supreme Court and the United States Court of Appeals have debated whether or not Global Positioning Satellite is a violation of the Constitution. The Courts have ruled it is not a violation of a person's civil rights to insert a Global Positioning Satellite tracking device into a container used in drug manufacturing, 1983 U.S. Supreme Court decision in *United States v. Knotts*¹⁰, and have also consistently ruled uses of Global Positioning Satellite tracking devices on suspect vehicles to be lawful, 1999 U.S. Court of Appeals for the 9th District in *United States v. McIver*¹¹. There is no statute or case law examining the merits of Global Positioning Satellite implants for tracking children; however, it would seem courts would support the reasonable use of Global Positioning Satellite for such safety purposes. To date nothing has been legislated specific to the use of Global Positioning Devices and children and whether we can implant children with them for tracking purposes.

IS GPS WORTH THE RISK?

So why is it that we don't think twice when purchasing a vehicle with "OnStar" or installed with the "LoJack" system? Currently, there are over two million subscribers of "OnStar", according to their web site. Are we not allowing someone to monitor where we are going or have been? Think about it. For those two million people who choose to have the system activated, have a private company tracking them and have their personal information. Why do we as a society not perceive this as an invasion of privacy and challenge this technology as much as we do if our children were tracked by the government. Do we put a value on our children as we do on our vehicle? Who would not want their \$40,000 vehicle returned to them after it was stolen by some unsympathetic punk who needs it to feed his habit? Let's change what was "stolen" and ask the same questions. Who would not want their child returned to them after they

¹⁰ Find Law for Legal Professionals, <http://caselaw.lp.findlaw.com/scripts/getcase.pl?court=US&vol=460&invol=276>

¹¹ [GPS Tracking Case Raises Privacy Issues](http://www.thelenreid.com), Daniel R. Sococool, 1999, November 01 <http://www.thelenreid.com>

were “stolen” or abducted by some unsympathetic punk who needs it to feed his habit? Can we say is it worth the risk, if one child is saved from the torture and mental suffering that is encountered in abductions by the use of Global Positioning Satellite devices, it is worth the risk?

CONCLUSION

Kidnappings, abductions, lost children, victims who could not be located might become a thing of the past if implanting of “chips” became more common. There is currently a growing business of child surveillance that includes cellular phones, wrist watches, and even surgically implanted chips. These tools are becoming even more popular since it provides a sense of security in today’s world of Amber Alerts, terrorist warnings, and online predators. Devices are being developed that can monitor via Global Positioning Satellite products, livestock, household pets, vehicles, and even humans, which are useful to law enforcement. With the advancements in technology, as well as the Global Positioning Satellite system, it is not beyond the imagination that in the near future information regarding our whereabouts could only be a keystroke away.

Although there are many who feel the implantation of children with Global Positioning Satellite devices is an invasion of privacy, we must take into consideration what is more important; our right to privacy or the lives of our children. However, the implementation of Global Positioning Satellite devices into our children would enhance their security and reduce the likelihood of any future abduction.

The future of Global Positioning Satellite technology in locating children is anybody’s guess and it’s never going to be foolproof, but imagine the peace of mind of knowing where your children are 24/7.

Joe Garza is a Lieutenant and 17-year veteran with the Reedley (CA) Police Department. Joe is currently conducting a research project on GPS Devices and Children as a tool for law enforcement while attending the California POST Command College.