



# THE PALI INFORMANT

Spring 2013



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## **Something Super This Way Comes: The East Coast PI Conference** by Gregory Pirnik

For those who prefer investing in the future of their PI business over gambling with it, Atlantic City is still a safe bet this summer. The 2013 East Coast Investigators' Superconference, coming to the Tropicana Casino & Resort from June 26<sup>th</sup> through June 28<sup>th</sup>, promises to be the largest professional investigator event in the country this year. Hosted by the New Jersey Licensed Private Investigators Association (NJLPIA) and more than a dozen other investigative associations, this 'Super Conference' is bringing blue chip speakers to the premiere Jersey Shore location.

Five keynote speakers will anchor the line-up on Thursday, June 27<sup>th</sup>. **Diane Dimond**, called a "renaissance broadcaster" for her cutting-edge investigative journalism, is a Special Correspondent for Newsweek / thedailybeast.com, has a nationally syndicated weekly newspaper column and can be seen on CNN and ET – Entertainment Tonight, and will explain how PIs can work with the media. FBI legend **Joseph Pistone** spent six years undercover in the Mafia in New York City, inspiring Johnny Depp's character in Donnie Brasco, and will share insight into undercover operations as only he can. **Vernon Geberth** retired from NYPD as Commanding Officer of the Bronx Homicide Task Force, which handled over 400 murder investigations a year. Given his highly deco-

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Any questions, suggestions or submissions for this newsletter may be addressed to its editor, Bill Everman, by e-mail to [wheverman@comcast.net](mailto:wheverman@comcast.net), by telephone at 610-494-0635, or by mail to PO Box 2006, Aston, PA 19014. Many thanks to Greg Pirnik for his help in editing, and to former newsletter committee members Barbara Thompson and Bob Kozura for their invaluable assistance.

# From The Editor

## by Bill Everman

Welcome to the latest issue of the PALI Informant.

Our newsletter is one way in which PALI seeks to benefit licensed investigators throughout Pennsylvania, whether they are members of the Association or not.

I just returned from another of the benefits PALI provides to all Pennsylvania licensed detectives: a free lunch. Periodically, PALI invites investigators in a given region to lunch, and we foot the bill. If you get one of these invitations, be sure to take advantage of it. The networking is great, and the lunch really is free!

Being the largest association of investigators in Pennsylvania, we also serve as your voice in Harrisburg, watching and sometimes testifying regarding legislation that might affect our industry, and through participation in ISPLA and NCISS, also help to represent the interests of investigators on the federal level.

If you join PALI, you will also be able to take advantage of extra benefits, such as a free subscription to PI Magazine, and access to our active and extremely useful e-mail listserv.

This issue we are providing you an immediate educational benefit through Ron Levi's excellent article on cell phone evidence, and alerting you to the terrific educational and networking opportunities that await you at this summer's 2013 East Coast Investigators' Superconference.

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rated 40-year spanning over 8,000 death investigations, few in the country are as qualified to speak on death and complex case investigation as Commander Geberth.

Although he began as a private investigator, **F. Lee Bailey** is better known as a high-profile criminal defense attorney. His rise to prominence began with the Sam Sheppard re-trial in 1966, included the 1971 court martial of Captain Ernest Medina for the My Lai Massacre in Viet Nam, and culminated with the infamous OJ Simpson trial in 1995, and he'll speak on preparing a case for trial. One of New York's most notable attorneys, **Anthony Capetola** brings over 40 years of trial experience to the table. Specializing in matrimonial law, he has tried international custody cases pursuant to the Hague Convention, and will speak on how to solicit work from attorneys.

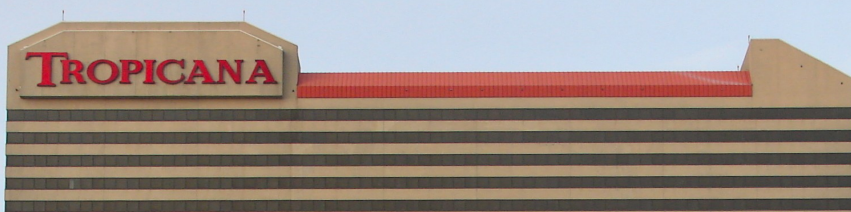
In addition to the keynote speakers, several fee based Pre-Conference Seminars will be available on Wednesday, June 26<sup>th</sup>. Marketing guru **Jimmie Mesis** has trained more than 10,000 PIs in the US and UK to achieve maximum exposure and income, and will offer simple, proven techniques to double clients and income. Deep web search specialist **Michele Stuart** will share her most current and comprehensive open source research techniques. **Cynthia Hetherington**, another database deep-miner and SMART Academy founder, will provide her blueprint for business background investigations. **Tom Shamshak**, program director and lead instructor of the Boston University's Certificate in Professional Investigations will speak on successful individual and agency branding, while **Barry Nixon** of the National Institute for Prevention of Workplace Violence will share his Dos and DON'Ts when conducting pre-employment background checks.

With all these and more on tap, why not join us for these three days in June? Door prizes will include a one-week trip to Aruba and vendor space remains available (at the time of this printing). Rooms at the Tropicana are available at a reduced rate of \$69 per night for Wednesday and Thursday, and \$109 for Friday. Select the **PALI promo code** when registering online before June 1<sup>st</sup> to get the lowest possible conference rate of \$350.

[CLICK HERE TO REGISTER!](#)

Don't miss this amazing opportunity to learn and network with the best and brightest in our profession, all only a short walk from the beach, boardwalk and nightlife that makes Atlantic City a people-watchers paradise.

Visit the conference website at [www.PImagazine.com/AC2013](http://www.PImagazine.com/AC2013) .



# Cell Phones-The Hidden Evidence

## by Ron Levi

Each week I receive many calls regarding the information that can be retrieved from cell phones. Investigators are amazed by the amount of detailed information that is stored on a cell phone. They are even more amazed of the amount of information that can be recovered, even if previously deleted.

Mobile phones are commonplace in today's society, used by many individuals for both personal and professional purposes. Cell phones vary in design and are continually undergoing change as existing technologies improve and new technologies are introduced.

This article is intended to familiarize the investigator with terminology associated with cell phones in the investigative world. This is a very brief overview of the mechanisms of mobile devices. Hopefully this will help you when speaking to your clients concerning cell phone technology.

### HOW THEY WORK

As the name implies, cellular networks provide coverage based on dividing up a large geographical service areas of coverage called cells. As a cell phone moves from one cell to another, a cellular arrangement requires active connections to be monitored and effectively passed along between cells to maintain the connection. There are 5 cellular components that make all this work:

- Mobile Station aka cell phone
- Base Transceiver Station (BTS) a/k/a tower
- Base Station Controller (BSC)
- Mobile Telephone Switching Office (MTSO)
- Public Switched Telephone Network (PSTN)



Simply explained, the BTS holds the transmitting and receiving cellular communications. It has two common identifiers called Location Area Code (LAC) and Cell ID (CID). The BSC manages tens of hundreds BTS (towers) by monitoring cell signal strength. It switches the cell to a different tower when the signal gets weak. It is also the link between the cell phone and Mobile Telephone Switching Office (MTSO). The MTSO controls the switching functions and call processing while the Public Switched Telephone Network (PSTN) con-

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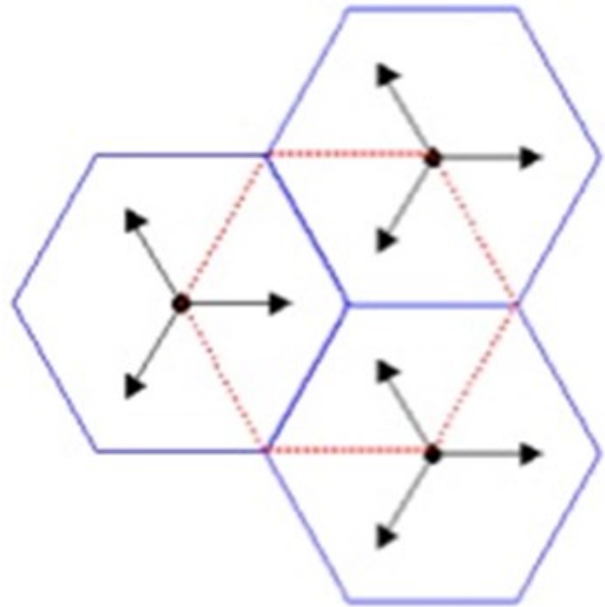
tains all the subscriber information as well as records roaming users and other administrative data.

## CELL SITES

Cell sites could be either omnidirectional cells or sectorized cells.

Omnidirectional cells are more common in rural areas and their antenna is a vertical pole about 10 – 15 feet in length. The antenna covers 360 degrees. Sectorized cells are typically 3 sides transmitting and receiving at 120 degrees each. There is no rule of thumb how these cells are pointed.

The importance of knowing which of the three sectors the cell phone hit will narrow down the location of that cell phone at the time of call or ping. This may give an advantage to your client in either placing him near the scene or in a totally separate direction of the scene. The exact facing of these sectors can only be obtained via court order or subpoena from the specific carrier.



Remember that it is not uncommon to have multiple carriers on the same tower.

## CALL DETAIL RECORDS

When requesting Call Detail Records (CDR) from a carrier, be specific. By ONLY requesting subscriber information will not return tower information. If tower information is required, request the CDR in electronic format to include subscriber information for a particular cell phone number, range of dates of records, incoming / outgoing calls, text messages and tower information. Keep in mind that most carriers will only keep the actual text on their servers for 3 -12 days so a letter of preservation would be necessary to preserve those records if necessary. The CDR will return the Originating /Dialed Numbers, Date/Time of Call or text, duration of call (in seconds), call type (inbound/outbound) and longitude and latitude of the originating and terminating cell sites. Don't forget to request the instructions for interpreting the CDR. CDRs from different carriers are different and without the instructions, you will have no way of interpreting the information. If you need help with the proper language to use on your subpoena, please feel free to contact me.

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## SAMPLE OF NEXTEL CDR

1	Customer PTN	Date	Call Initiation Time	Duration (sec)	Type	Forwarded	911	International	Caller / Called PTN	Originating Cell Site	Terminating Cell Site
2	9195558628	2-Apr-2007	5:46 PM	52	Outbound	No	No	No	19195558628	NVA0470S_IcKeeneM1, (BAWA-4) 2460 5349	NVA0470S_IcKeeneM1, (BAWA-4) 2460 5349
3	9195558628	2-Apr-2007	5:47 PM	13	Outbound	No	No	No	7545558002	NVA0470S_IcKeeneM1, (BAWA-4) 2460 5349	NVA0470S_IcKeeneM1, (BAWA-4) 2460 5349

- ✓ Subscriber's phone number
- ✓ Date and time call was initialized
- ✓ Duration of call in seconds
- ✓ Type of call (inbound/outbound)

1	Customer PTN	Date	Call Initiation Time	Duration (sec)	Type	Forwarded	911	International	Caller / Called PTN	Originating Cell Site	Terminating Cell Site
2	9195558628	2-Apr-2007	5:46 PM	52	Outbound	No	No	No	19195558628	NVA0470S_IcKeeneM1, (BAWA-4) 2460 5349	NVA0470S_IcKeeneM1, (BAWA-4) 2460 5349
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- ✓ Was the call forwarded to another number?
- ✓ Was this an emergency call?
- ✓ Was this an international call?
- ✓ The phone number of the other party in the call

1	Customer PTN	Date	Call Initiation Time	Duration (sec)	Type	Forwarded	911	International	Caller / Called PTN	Originating Cell Site	Terminating Cell Site
2	9195558628	2-Apr-2007	5:46 PM	52	Outbound	No	No	No	19195558628	NVA0470S_IcKeeneM1, (BAWA-4) 2460 5349	NVA0470S_IcKeeneM1, (BAWA-4) 2460 5349
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Originating and Terminating Sites

1. Site Name
  - a. Each site has a name
2. Switch Name
  - a. (BAWA-4) indicates which cell site reference sheet to use
3. Location area code (2460)
  - a. Not need to identify a specific tower
  - b. Usually found in smaller geographical areas with multiple cell sites
4. Cell ID
  - a. Used to identify a specific cell site

1	Customer PTN	Date	Call Initiation Time	Duration (sec)	Type	Forwarded	911	International	Caller / Called PTN	Originating Cell Site	Terminating Cell Site
2	9195558628	2-Apr-2007	5:46 PM	52	Outbound	No	No	No	19195558628	NVA0470S_IcKeeneM1, (BAWA-4) 2460 5349	NVA0470S_IcKeeneM1, (BAWA-4) 2460 5349
3	9195558628	2-Apr-2007	5:47 PM	13	Outbound	No	No	No	7545558002	NVA0470S_IcKeeneM1, (BAWA-4) 2460 5349	NVA0470S_IcKeeneM1, (BAWA-4) 2460 5349

Used to Find Appropriate Cell Site

1	A	B	C	D	E	F	G	H	I
1	LAC	CID	SITE	sw_name	Latitude	Longitude	ACG	Sector	UANC
2	2460	5316	NVA0754S_IcCCCWdbrd	BAWA-4	38.646912	-77.262004	1106	1	7
3	2460	5349	NVA0470S_IcKeeneM1	BAWA-4	38.774321	-77.262534	439	1	7
4	2460	5359	NVA0512R_IbWoodlawn	BAWA-4	38.709851	-77.157189	278	1	7
5	2460	5360	NVA0512R_IbWoodlawn	BAWA-4	38.709851	-77.157189	278	2	7
6	2460	5361	NVA0512R_IbWoodlawn	BAWA-4	38.709851	-77.157189	278	3	7
7	2460	8832	NVA0444R_IcLorton	BAWA-4	38.683011	-77.236438	131	2	7

LATITUDE  
OF TOWERLONGITUDE  
OF TOWER

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## Latitude and Longitude of Tower

Latitude lines run North or South and Longitude lines run East or West. The above sample is presented in decimal value. Because the United States is located North of the Equator, the Latitude will always be a positive number. Because the United States is located West of the Meridian, the Longitude will always be negative. There are many cell tower location sites to show the geographical location of the towers by entering the Latitude and Longitude coordinates including google earth.

There are several web sites that will easily convert decimal numbers to degrees if necessary, such as: <http://transition.fcc.gov/mb/audio/bickel/DDDMSS-decimal.html>

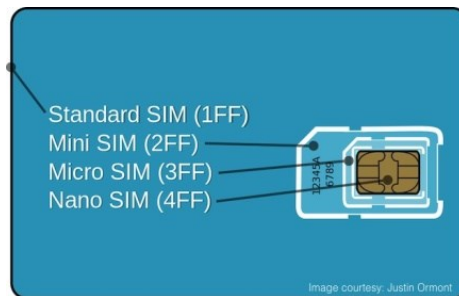
## MOBILE DEVICES

There are a number of electronic personal devices that are labeled “mobile devices” on the market today. Mobile devices include cell phones / smart phones like the Apple iPhone, Blackberry, Android, personal digital assistants (PDAs), iPODs and iPADS.

Technological and storage capacity for mobile devices has grown exponentially. Over the last decade, capabilities and features of mobile devices have turned them into data repositories that can store a large amount of both personal and organizational information. Mobile devices can contain such electronic records information such as electronic mail, word processing files, spreadsheets, text messages, global positioning system (GPS) tracking information and photographic images that can provide investigators with essential evidence.

Most information is stored in the mobile phone’s internal memory. The cable used to access the mobile device’s memory will vary according to manufacturer and model. Many examiners look at the SIM cards, which store personally identifiable information (PII), cell phone numbers, phone book information, text messages and other data for valuable information because it is typically stored in a standard format; however, the limited storage capacity of a SIM card forces the majority of the data to be stored on the phone itself.

Subscriber Identity Modules (SIM) are used with devices that interoperate with GSM cellular networks. The SIM is a removable component that contains essential information about the subscriber. The SIMs main function is authenticating the user of the cell phone to the network to gain access to subscribed services. The SIM also provides storage for personal information such as phone book entries and text messages. Only phones that are connected to the GSM or IDEN networks contain SIM cards.



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## **CELL PHONE INVESTIGATIONS**

There are four potential sources of information in a cell phone investigation. Data and evidence can be obtained from internal within the phone's memory, a media card connected to the phone, a SIM card found in GSM style phone or from the service provider.

The potential evidence on these devices includes the following items:

- ☐ Subscriber and equipment identifiers
- ☐ Date/time, language, and other settings
- ☐ Phonebook information
- ☐ Appointment calendar information
- ☐ Text messages
- ☐ Dialed, incoming, and missed call logs
- ☐ E- mail
- ☐ Photos
- ☐ Audio and video recordings
- ☐ Multi-media messages
- ☐ Instant messaging and Web browsing activities
- ☐ Electronic documents

Whether your investigation involves infidelity including social networking sites, divorce, corporate fraud, sexual harassment, white collar crime etc., you can now determine if the information that can be extracted from a cell phone will help find your answers.

Forensic tools acquire data from a cell phone in one of two ways: physical acquisition or logical acquisition. Physical acquisition implies a bit by bit copy of the entire physical structure while the logical acquisition implies a bit by bit copy of the logical storage area; ie files and folders. A physical acquisition allows deleted file recovery from unallocated space. This is a huge investigative tool. If the data has not been overwritten, deleted text, emails, contact information and even voice mail and can be recovered.

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## **META DATA**

Meta data is defined as data about data. Meta data can be embedded in a digital object or it can be stored separately. Metadata is often embedded in HTML documents in the headers of image files.

For example, an image may include metadata that describes how large the picture is, the color depth, the image resolution, when the image was created, GPS coordinates of where the



picture was taken and other data. A text document's metadata may contain information about how long the document is, who the author is, when the document was written, and a short summary of the document.

Dennis Rader aka BTK Killer was a serial killer who murdered ten people around Wichita, Kansas between 1974 and 1991. The police began corresponding with the BTK Killer in an effort to gain his confidence. Rader asked them if it was possible to trace information from floppy disks. The police department replied that there was no way of knowing on what computer such a disk had been used. Rader then sent the police a floppy disk with a word document. The meta data of the word document revealed that the creator of the document was a person by the name of

Dennis. They also found a link to a Lutheran Church. Police conducted a simple search using the words, "Lutheran Church Wichita Dennis." They found that a Dennis Rader was listed as the Deacon of the Lutheran Church.

## **TYPE OF INVESTIGATIONS**

Having a cell phone examined for evidence can be beneficial in a variety of cases. Recently, a concerned parent brought in their minor daughter's cell phone to our office, as they suspected she might be involved in inappropriate activity. Deleted texts were recovered that revealed that she was being groomed by her high school teacher for a sexual encounter. Because of this incident, we created [www.exposeapredator.com](http://www.exposeapredator.com) to help other parents or school administrators who may suspect the same activity.

Suspicious deaths, domestic incidents, divorce, child custody, criminal investigations, company espionage, theft of trade secrets, sexual harassment are just some of the type of investigations that data from cell phone examinations may help you further your investigation.

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## IN CONCLUSION

Successful investigators must keep up with changing technology. Mobile devices, specifically smart phones, are quickly replacing the lap top computer. Although you may not have the expertise to perform the examination, you now know what evidence can be extracted to help you in your investigations.

Our forensic cell phone technology hardware and software can process over 9,000 different make and model mobile devices. Don't hesitate to contact us if you have a question regarding your case and the use of a mobile device. If your case involves the endangerment of a child, we will process your case within 24 hours.

*Forensic Cyber Investigations LLC is a full service digital investigation business owned and operated by current and former law enforcement officers all of which are Certified Forensic Computer Examiners. We can be contacted by calling 724-503-3600 or ron@forensiccyberinvestigations.com*



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We are strongly considering moving all PALI members to the digital-only delivery in the future, while still mailing printed newsletters to non-members and members who specifically request printed copies. We believe that the digital version adds value for our members, since they can follow links from articles and advertisements to more information, but we also believe that one of our responsibilities as the largest PI association in Pennsylvania is to keep non-members informed, and we have e-mail addresses for relatively few non-member investigators.

If you have thoughts on this prospective change, please e-mail Bill Everman at [wheverman@comcast.net](mailto:wheverman@comcast.net).

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